Original Articles.

SOME PROBLEMS IN NEPHRITIS.*

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During the past few years much attention has been given to the study of nephritis, both abroad and in America. Experimental nephritis in animals has taught us much in regard to these obscure conditions and will give us even more valuable information in the future. A number of new ways have been devised for studying the functions of the kidneys, and some of these are easily applicable to patients. In many other lines of investigation progress has been made. Enough has been done to show us that our old classification is unsatisfactory, and that many of our ideas were erroneous. The solution of many of the problems, however, has not been reached. The effect on the general practitioner has been to unsettle many of his convictions without giving him definite and reliable information to take their place. Have these investigations any practical bearing on the diagnosis, prognosis and treatment of nephritis? That is the question that the general practitioner asks,—and he asks it sometimes with some impatience.

It is not the purpose of this paper to give a complete answer to this question, for our knowledge on this subject is not yet complete enough to warrant definite conclusions. Neither will the attempt be made to make a systematic summary of our present knowledge and views of nephritis. This could be done properly only in a monograph,—not in an ordinary paper before a medical society. It has, however, seemed worth while to present to you some personal experience with some of the problems of nephritis, and to show to what extent these functional tests and other methods of investigation have been of value in dealing with these problems. Only a part of the field will be touched upon. Single typical cases will be used in the way of illustration, rather than any attempt to establish a point through the statistical compilation of cases.

The cases here presented belong mostly to the general class of cardio-renal cases, in which the condition of the kidneys is usually spoken of as chronic interstitial nephritis. This is a very comprehensive class, including cases that vary widely as to their cause and equally widely in their manifestations. In a large majority of these cases, as seen clinically, the cause of the disease cannot be definitely determined. In a number of cases the writer has been of the opinion that the most reasonable explanation lay in an excess of nitrogen in the diet.

In seeking an etiology for a given case of nephritis, we may consider the possible causes under three heads. 1. Microörganisms, which by locating in the kidney substance cause an inflammatory reaction. 2. Toxins, which may cause an inflammatory or degenerative reaction, depending on the kind and the strength of the toxic substance. 3. Circulatory changes, including both mechanical changes in the general or the renal circulation, and alterations in the vessel walls. In the class of cases which I attribute to an excessive amount of nitrogen in the food, the infections of the kidney may be ruled out, the circulation is essentially normal, and arteriosclerosis does not exist to a sufficient degree to cause definite degeneration of the renal cells. We must, therefore, look for our explanation in some toxic substance.

In these cases toxins from micro-organisms may be ruled out, except those which may be produced within the intestinal canal, and these may be disregarded practically if the bowels are kept freely open. Toxic substances from outside, such as lead and alcohol, have not been taken. We are, therefore, reduced to the consideration of toxic substances produced within the body by metabolism. We know that the chief function of the kidneys is to eliminate the products of nitrogenous metabolism, and that such substances, when not removed, act as poison to the system. If in sufficient amount, they produce the condition known as uremia.

According to the theory advanced above, the continued excessive ingestion of nitrogenous food (protein) taxes the functional power of the kidneys. An excess of nitrogenous waste material in the circulation may well be irritating to the kidneys, as it is to other organs and tissues. It is recognized that one such product, uric acid, does have such an effect, if in excess. Where there are no manifestations of gout, but a known excessive ingestion of protein, it seems probable that the trouble is due to an excess of some other nitrogenous waste product or products, whose identity is as yet unrecognized. If this is true, then the dictum, "Spare the kidneys by reducing the amount of protein in the food" is of great value as a preventive measure against nephritis, as well as the most important method of treating the disease when it has once been established. The following case illustrates this view.

Case 1. Male, 46 years, married, real-estate dealer. Heredity exceptionally good; from a long-lived family. Had always been in robust health; no venereal disease; no alcohol; tobacco in moderation. His habits were regular; he was an active business man, but without unusual business strain. There were none of the etiological factors usually spoken of in connection with chronic interstitial nephritis, but he was a hearty eater and habitually ate an excessive amount of meat. This, in my opinion, was the reason why at the age of 46 he showed an early stage of Bright's disease.

He was first examined in the spring of 1900. The urine showed the faintest possible trace of albumen and a few hyaline casts,—nothing else abnormal. The heart was moderately enlarged. The

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pulse was rapid,—100, and increasing to 112 on slight exertion,—and it showed high tension. No apparent arteriosclerosis. He complained of rapid heart action, nervousness, general malaise, and loss of appetite. This case would ordinarily be classed as one of primary chronic interstitial nephritis. He was placed on a somewhat restricted protein diet; he improved rapidly, and was not heard from again as a patient until June, 1905.

In June, 1905, he consulted me for a cold. It was found that the Bright's disease was in a much more advanced stage, although cardiac compensation had kept him relatively free from symptoms. After following the diet directions of 1900 for about a year, he had felt so well that he abandoned the restrictions and began to eat meat freely again. He was again placed on a low protein diet, with meat carefully restricted, and did very well until he had a retinal hemorrhage, about Jan. 1, 1907. He then consulted an oculist, who told him of the retinal hemorrhage and also stated that he had "advanced Bright's disease."

While this statement was true, the man's temperament was such that it was inadvisable to let him know how serious his condition was. I had spoken only of "kidney trouble" in terms serious enough to secure his thorough co-operation in dietetic treatment. He now became exceedingly worried and was unmanageable. He frantically tried one treatment after another that was reputed to "cure" Bright's disease. He abandoned each when it failed after a short trial, and sought my advice only at intervals. He grew rapidly worse, went abroad, against my advice, to consult European "specialists," and barely got home alive. He died in the spring of 1908 at the age of 54 years. No autopsy was allowed, but clinically it was a typical case of chronic interstitial nephritis. His death was due more directly to circulatory failure than to renal inefficiency, although at the very last there was a mild uremic condition.

One of the definite problems in chronic nephritis is the question of how much to tell patients about their condition. There can be no rigid rule. Each case must be judged on its own merits. Tranquillity of mind and a hopefulness for benefit, if not for a cure, are valuable aids to other forms of treatment. To most people the term "Bright's disease" means a warrant for a speedy death. The straight question, "Have I got Bright's disease?" is a hard one to answer, but it can generally be parried, or the affirmative answer can be so explained as to avoid the terror which people commonly associate with the name.

In this case the oculist made a mistake in telling him bluntly that he had "advanced Bright's disease." He added to his mistake by recommending an extremely limited diet, based chiefly on a certain kind of bread. This diet was, to be sure, very low in protein, but it was entirely inadequate for proper nutrition. When he returned to my care after a short interval, he had lost markedly in weight and strength, and the compensation of his heart was badly broken because of poor nutrition. This was the beginning of a rapid decline. As soon as his heart was somewhat improved he rushed off to one of the "water cures," and speedily broke the compensation again by overloading his circulation with large quantities of fluid. And so he went from bad to worse, and finally squandered what little strength he had left in a trip to Europe in the hope of getting better advice.

CASE 2 illustrated this problem, as well as demonstrating that our ordinary prognostic rules do not always hold true. I believe this case also was due chiefly to a high protein diet, although arteriosclerosis entered into the problem to some extent. When first treated he was 60 years of age. He had a good deal of arteriosclerosis. The urine was characteristic of chronic interstitial nephritis, as were also the cardio-vascular changes. He had just suffered a hemianopsia, which was apparently due to a slight cerebral hemorrhage. The prognosis as to duration of life would ordinarily be given as a very few years at most, yet this occurred fifteen years ago, and the patient today is considered a very well-preserved man for seventy-five years of age. He really considers himself too well to be under a doctor's care. He does not know to this day that he has any serious kidney trouble and he has lived comfortably and enjoyed life. His temperament is such, however, that if he had known the exact conditions he would have worried himself into his grave in short order.

Fifteen years ago a moderate regulation of his diet and the establishment of a regular regimen was sufficient to restore him to relatively good health. Ten years ago he had very mild uremic symptoms, and the dietary restrictions were increased. In the early spring of 1910 he again had a mild uremic attack, but refused to regard his condition as more serious than a "slight indigestion" until in June of that year he had a severe uremic attack. Since then he has followed the directions about diet very faithfully, and has remained well for three and one-half years. Except for mild cardiac stimulation and an occasional laxative pill, he has had no drug treatment.

In June, 1910, when he had his last uremic attack, his blood-pressure was 210. He was placed on a diet containing 70 grams* of protein and 2000 calories daily. Under this dietetic treatment his blood-pressure soon fell to 160, and it remained between 160 and 170 for three years,—until about six months ago. It has since then been gradually rising and now ranges from 180 to 200. His cardiac compensation is still good, however, and so far it has not seemed necessary to restrict his diet any more.

This case may serve as an introduction to the very interesting problem of the relation of renal inefficiency to high blood-pressure, including the question as to whether we can affect the blood-pressure in such cases by regulating the diet.

As a result of studying a large number of cases of chronic interstitial nephritis, I am convinced that in a great many cases the blood-pressure can be materially lowered by reducing the amount of protein ingested in the food. The

* The amount of protein taken by a patient is, of course, not known accurately,—as in an elaborate metabolism experiment in the laboratory. These figures are approximate only. However, the error is probably very slight, and they are as accurate as can be hoped for in practice.

basis for this belief lies in the fact that in so many cases the blood-pressure falls after such a regulation of the diet, when apparently all other conditions as to mode of life and treatment have remained the same. In these cases the low protein diet was employed at first on the principle of sparing the kidneys, and with no expectation of any effect on the blood-pressure. Observations on the blood-pressure were made as a matter of routine study. The frequency with which there was a fall in pressure and the amount of the reduction soon attracted my attention. It does not occur in all cases, but I think we must accept as a clinical fact that such a reduction is the rule rather than the exception in the class of these cases that are able to be about and can come to the doctor's office.

What the explanation may be is another matter,—the fact remains, and it is a most important factor in the treatment of such cases. Furthermore, the reduction thus obtained is usually greater than I have been able to obtain by any other method. In my experience vaso-dilator drugs rarely give a persistent reduction of more than 10 mm. Some time ago I tabulated my results from high-frequency electricity, and found the average reduction was from 10 to 15 mm. In those cases in which the blood-pressure falls as a result of a low protein diet, reduction of 20 to 30 mm. are very common, reductions of 30 to 40 mm. are far from rare, and I have seen a reduction of 60 mm. or more in a few cases. In those cases in which the heart is laboring to maintain an adequate circulation, a reduction of the pressure by 20 mm. or more is a most valuable aid in restoring compensation.

Case 3 is interesting from the point of view of the effect of the diet on the blood-pressure, but it also illustrates the fact that in many cases by a proper regulation of the diet, life may be prolonged in advanced cases far beyond what we have been taught to expect.

This patient was a manufacturer, and was 61 years of age when he had his first uremic attack, about the last of October, 1908. The attack was so severe that for a time his life was despaired of. I saw him first on the second day of his second uremic attack, December 26, 1908. This attack was less severe than the first one, yet he was in a state of profound stupor, from which he could be aroused only with difficulty, and into which he sank again after a few moments. This was a case of chronic interstitial nephritis, with a moderate amount of arteriosclerosis. Renal inefficiency was marked enough to result in uremia, but the cardio-vascular system was in fairly good condition. This case, however, was not actually as advanced as the uremic attacks would seem to indicate. The chief reason for this statement is that under only moderate limitation of protein he lived a little more than three years and two months after I saw him first, and finally died of circulatory failure. He was found dead in bed on the morning of March 3, 1912. Except in his acute attacks the protein in his diet was not reduced below 70 grams daily, and it was often 80 grams or more.

In explanation I would say that I have taken 90 grams of protein as an entirely sufficient allowance for a healthy person, and as the maximum that any person should take when there is any question of impaired renal functions. I have taken 40 grams of protein as the lowest practical limit to be kept up continuously in cases with marked impairment of these functions, and have fed patients for months at a time at this lower limit. In proportion to the estimated severity of the case, the protein is reduced from 90 grams toward 40 grams. That this man could live over three years on a diet averaging about 80 grams of protein daily argues against an extreme impairment of the renal functions.

There was, however, a definite limit to the power of elimination by his kidneys, and if this was exceeded for any length of time he was soon in trouble. After the attack in December, 1908, he recovered his strength so quickly and felt so well that he could not be persuaded that continued restriction of the diet was necessary. However, a relatively short break from diet regulations caused a moderately severe uremic attack on May 5, 1909. After that he was more tractable.

At another time, when he was following his diet carefully at 80 grams of protein daily, he added green peas, on his own initiative. I had allowed him a certain list of green vegetables. He decided that fresh peas in the spring might be considered a "green" vegetable, not knowing that peas contain about 7 per cent. of protein. As he was fond of peas he ate them freely every day and unwittingly increased his protein by about 10 grams daily. This was the only departure from the authorized diet, yet after about ten days or two weeks this slight excess caused mild uremic symptoms.

We had, then, in this case a pretty sharply marked limit to the amount of protein he could take in his food. If he kept below this limit, he felt, to use his own words, "better than he had been for years." If he exceeded this limit for a short time, he lost his appetite and suffered from malaise; if he continued a longer time he had definite uremic symptoms. It seems clear that these symptoms, mild or severe, were due to the retention of nitrogenous waste products in the system, due to the ingestion of more nitrogenous food than the kidneys could eliminate.

This case illustrates especially well a variation in the blood-pressure corresponding with the excess of nitrogenous waste material in the blood. In his first uremic attack the blood-pressure is reported to have been 212. In the second attack I found it 190, but this observation was made shortly after a dose of nitroglycerin, and it probably had been over 200. Under a low protein diet the blood-pressure gradually fell to 160 on the thirteenth day after the uremic attack began. He was then able to come to my office and in the following

two weeks received eight treatments with high-frequency electricity. The average fall of blood-pressure at the end of each treatment was 10 m.m., although, of course, the effect of each single treatment on the blood-pressure was largely temporary. At the end of this period the blood-pressure had fallen to 140,—a total reduction of at least 50 mm.

In the attack in May, 1909, the reduction was even more striking. The blood-pressure was highest on the third day of the attack, when it registered 230. On the fourth day, 220; fifth day, 180; sixth day, 170. At this point he was able to sit up. On the eighth day it was 140. On the ninth day he was able to go out for a short walk. On the tenth day the blood-pressure was 135, and registered the same when he came to my office on the twelfth day. Here was a total fall of 95 mm. in 9 days, with no apparent explanation except that a low protein diet allowed the kidneys to eliminate the excess of nitrogenous waste material in the blood.

During the period of about three years when he was under treatment his blood-pressure would remain between 140 and 150 if he remained on a strict diet. However, although he reported for examination fairly regularly, he repeatedly broke over his diet restrictions, and thus gave an unusual opportunity to study the relation of a varying protein diet to blood-pressure. With an increase in the intake of protein the blood-pressure rose. The rise was roughly proportioned to the excess of protein, and not infrequently reached 170 or 180. Numerous other cases have apparently shown the same relation. Incidentally I may add that I have never seen any ill-effects from any reduction of the blood-pressure that resulted from, (or accompanied?) a low protein diet. It has been held by some authorities that a high blood-pressure in chronic interstitial nephritis is a conservative process and should not be interfered with. In this class of cases, of which I have given instances, nothing but benefit has followed such reduction.

But this is not the whole story. In other cases, apparently similar, no reduction of blood-pressure followed a considerable reduction of protein in the diet. It would appear that the conditions in these two classes of cases must be materially different, and we look to the newer methods of investigation in the hope that we may gain information which will enable us to differentiate the several varieties of disease which are now all included under the head of chronic interstitial nephritis.

A little more than a year ago, Professor Folin announced new methods of blood analysis by which could be determined with great accuracy the amount of nitrogenous waste products in the blood, and also the amounts of urea, ammonia, and uric acid. These methods are too difficult and delicate to be performed by practicing physicians, but the results are of great clinical importance in some cases. Folin states that in nephritis he has found the amount of nitrogenous waste products to vary from slightly above normal to four or five times as large as normal.

In cases of pronounced or threatened uremia the amount of waste nitrogen has been very high, otherwise the amount has not seemed to correspond to any particular clinical diagnosis. He also states that in these cases he has found "no correspondence between the blood-pressure and the degree of retention of the ordinary nitrogenous products." The amounts of these various substances in the blood are expressed in figures representing the number of milligrams in 100 grams of blood. In the cases which follow the amounts found will be stated in comparison with the normal amounts.

CASE 4. Merchant, 57 years. A case of moderately advanced chronic interstitial nephritis, moderate arteriosclerosis, and myocardial degeneration. In this case alcohol was an important etiological factor. He was a hearty eater and an estimate of his ordinary diet, recorded for three days, showed a daily average of about 140 grams of protein and over 3000 calories. The output of urea was approximately 20 grams in 24 hours, which is abnormally low for the amount of protein in the food. It seemed probable that there was retention of nitrogenous waste products in this case, and a specimen of blood was taken and sent to Professor Folin for examination. The report showed the amount of uric acid to be at the upper normal limit, the nitrogenous waste nearly twice the normal amount, and the urea once and a half times the normal amount.

The amount of protein in the diet was reduced from 140 grams to 70 grams, and the calories from 3000 to 2000. On this diet he had fewer symptoms and seemed to improve. Another specimen of blood was taken for examination 26 days after the first one. The uric acid had fallen from the upper normal to the lower normal limit, the nitrogenous waste was reduced one-third, but the urea was reduced only one-tenth.

The blood-pressure at the time of the first blood analysis was 195, at the time of the second analysis it was 185, and three weeks later it had fallen below 170. This is not as striking a fall in blood-pressure as has occurred in many cases, but it is a definite drop. The patient did not return for further observation, but we learned from his family physician that after a definite improvement he became careless about his diet and had resumed his alcoholic habits. The case shows by blood analysis a retention of nitrogenous waste, as was expected, and a definite drop in its amount when the amount of protein in the food was reduced. At the same time there was a definite fall in blood-pressure. So far this is the only one of my cases of this type in which this change has been followed through two blood analyses.

Correct, in this case, would seem to be our theory of impaired excretion, the retention of nitrogenous waste, and some relation between this and the blood-pressure. I believe this is a typical case of a certain variety of chronic interstitial nephritis. I have had the blood examined in a number of other cases which failed to give any confirmation of this theory. However, any

argument on a numerical basis among these cases would not be fair, for the other cases were the ones which had failed to respond to dietetic treatment. In other words they belong in a different class. Statistical arguments are valueless unless cases that are to be compared are so selected that they belong to a sharply differentiated class.

The figures in Case 4 are as follows:

	Uric Acid.	Nitrogenous Waste.	Urea Nitrogen.	Protein in Food.	Blood-Pressure.
Normal	1-2	24-26	12-13	90 grams	150
Dec. 12, 1912	2	46	19	140 grams	195
Jan. 7, 1913	1.2	30	17	70 grams	185
Feb. 1, 1913	—	—	—	70+ grams	170—

Case 5 is interesting in several respects, and shows among other things, that one normal blood analysis does not settle the diagnosis of the case. Accurate and reliable as this test is, nevertheless it throws light on but one factor in the clinical picture. It does not necessarily invalidate other evidence, and this case shows the value of considering all the features in the case in the interpretation of the significance of the blood analysis.

This patient was a married woman of 28 years. In 1910 she had eclampsia at the seventh month of her first pregnancy. She had albumen in the urine at that time, but the urine is reported to have been free from albumen since her recovery from that illness. In 1911 she had a miscarriage at about the third or fourth month of pregnancy, but there was no eclampsia. She has not been pregnant since. Early in 1913 her appendix was removed. No renal trouble was noted at the time of this operation. In the summer of 1913 her blood-pressure was found to be 200. I examined her first on September 23, 1913.

At that time the systolic blood-pressure was found to be 240, and the diastolic pressure was 120. The heart was moderately enlarged. There was a slight mitral regurgitation. It was reported that the urine had been examined recently and found to be normal. A single specimen at the time of my examination showed no albumen, but a centrifugalized sediment showed a few hyaline casts. One week later a twenty-four hour specimen showed the slightest possible trace of albumen by the nitric acid test, and the sediment contained a number of hyaline and fine granular casts.

The case appeared to be one of chronic interstitial nephritis. There seemed to be no etiological factor except the possibility that the trouble started from some one of the ordinary infectious diseases or a tonsillitis which she had had in childhood and early youth. It seems probable that it antedated the attack of eclampsia in 1910. She was anemic, the hemoglobin being down to 60%, and she had suffered from anemia five years before. It was my opinion that the slight mitral regurgitation was due to the anemia, acting through a poorly nourished left ventricle. She had had no symptoms and considered herself well, except for slight breathlessness on marked exertion.

An estimate of the diet for four days showed an average protein intake of 56 grams, but it had varied on the different days from 41 grams to nearly 70 grams. Her attending physician had reduced her allowance of meat to small amounts, so that she was already on a low protein diet, but with rather wide variations from day to day. The twenty-four hour amount of urea was 9.4 grams. —a low amount for a diet containing about 60 grams of protein. This fact, together with the evidence of the urinalysis led me to infer that she had chronic interstitial nephritis with impaired elimination and the retention of nitrogenous waste. The blood-pressure, however, was so high that it did not seem probable that it was due solely to the amount of nitrogenous waste that would be retained from so low an amount of protein in the diet.

On Oct. 1 a specimen of blood was taken for analysis. The report showed figures for uric acid, nitrogenous waste, and urea nitrogen that were about the low normal limit. At first sight this report would seem to indicate not only that there was no accumulation of nitrogenous waste in the blood, but that there was no nephritis. However, the other evidence seemed to indicate so clearly that this case was interstitial nephritis and that probably the power to eliminate nitrogen was impaired, that I looked for an explanation for the apparent discrepancy. It then appeared that on the day when the urine was collected, the day before the blood was taken for analysis, she had taken only 41 grams of protein. It therefore seemed probable that the kidneys could eliminate the amount of nitrogenous waste from this amount of protein and that this would explain the absence of any accumulation in the blood. Therefore this condition of the blood did not necessarily exclude nephritis. Her blood-pressure at this time had also fallen to 225.

As soon as the blood had been taken for examination she was placed on a diet containing 2000 calories and 60 grams of protein. This was not a lower amount than the average she had been taking, but it was thought that she would do better on a steady diet of this sort than on the wide variations her diet had shown before. On October 10 she was ordered a capsule three times daily, which contained 5 gr. of ferrous carbonate and 1-6 gr. of extract of nux vomica. This was given for her anemia and constitutes the whole of the medicinal treatment to date. On November 14 her diet was cut to 52 grams of protein, and on December 4 it was reduced to 44 grams. On that date the hemoglobin had risen from 60 to 80%, and the systolic blood-pressure had fallen to 200, although the diastolic pressure remains about the same, 120 to 125. She was appreciably better in every respect, and this improvement and the lowered blood-pressure seemed to be the results of a low protein diet.

Meantime, on Oct. 28, she entered the Peter Bent Brigham Hospital so that I might get a report on tests of her renal functions. While there, on a somewhat higher protein diet, another analysis of the blood was made and the amount of nitrogenous waste was found to be fully double the normal figure. In other words, this patient had a definite limitation to the power of her kidneys to eliminate nitrogenous waste. When the protein intake was sufficiently low there was no accumulation of these waste products in the blood, but when it exceeded the limit of excretion these waste products promptly accumulated in the blood.

A closer study of the output of urea in the urine showed that the action of the kidneys in this respect was sluggish. It was also shown that the elimination of salt was poor. On the other hand, the water balance was practically normal, and the tests for the excretion of potassium iodide and lac-

tose were normal. The phthalein test was nearly normal.

This case would ordinarily be classed clinically as one of chronic interstitial nephritis, yet it is distinctly different from the ordinary type of this disease. By means of the blood analyses and the tests of the renal functions we are able to show this, and we have received valuable information to guide us in treatment. Her protein intake should be kept as low as 45 grams daily and the amount of salt taken in the food should be limited. That the other renal functions are normal is valuable knowledge, and it possibly warrants a better prognosis than we should ordinarily give. I do not think we have yet accounted for her very high blood-pressure. Apparently this has been influenced to a slight extent by regulating the diet, but it would seem to be chiefly due to some other factor.

Certain aspects of Case V have brought us to the consideration of the clinical tests of the renal functions. These will be reviewed very briefly, with a few words of comment. The details of the technique will not be given, for lack of time.

The phenolsulphonephthalein test is supposed to measure the general excretory function of the kidneys. It is sometimes called the "phthalein" test or the "red" test, as a matter of convenience. Up to the present time it has been used more extensively in surgical cases than in medical cases. It has established a definite place for itself in surgery, especially in reference to the question of operations on the urinary tract. If the excretory power of the kidney is sufficiently low, operative measures should be postponed, if possible, until the renal functions have been improved by treatment, or in some cases they should be abandoned altogether. The mortality in several of these operations has been materially lowered through the intelligent interpretation of the results of this test.

This test has not been employed as extensively in the study of medical cases as in connection with surgical operations. It is, of course, equally accurate for medical cases, but the interpretation of the results is not so clear. It should be used more frequently in the study of such cases, and we may hope that with the collection of sufficient data this test will have a greater value in relation to the diagnosis, prognosis, and treatment. At present we may state that the percentage of phthalein excreted is reduced in cases of nephritis, and that the degree of reduction corresponds generally to the degree of impairment of the renal functions. In threatened uraemia the percentage is usually very low. Furthermore this test sometimes indicates a dangerous impairment of the renal functions, when other evidence of such a condition is lacking. On the other hand if other symptoms indicate danger, we should not disregard the warning because the phthalein test is essentially normal. Cases have been reported in which the phthalein test was essentially normal, yet uraemia followed in a very short time. A very low phthalein test, combined with a blood analysis which shows a large amount of retained nitrogenous waste, strongly suggests the imminence of uraemia.

We are not able to infer much from this test as to the duration of life, because we do not yet know how low the phthalein test may go and yet be compatible with a renal efficiency that will sustain life indefinitely, if the diet and regimen of the patient are properly adjusted. This is especially true of cases of interstitial nephritis which are stationary or are progressing slowly. This test, however important, is but one piece of evidence, and it must be considered in relation to all the other evidence in the case. The phthalein test gives no special indications as to the treatment of cases of nephritis, except in those cases where it indicates that uraemia is imminent. Here we would inaugurate vigorous measures earlier than if we depended solely on the other indications.

We now come to the consideration of functional tests which determine the power of the kidneys to excrete certain individual substances. The substances at present utilized for such tests are water, salt, nitrogen, lactose, and iodide of potash. Information about the excretion of the first three (water, salt, and nitrogen) has a distinctly practical bearing on the problems of treatment. If the kidneys have difficulty in eliminating any of these substances, it is common-sense to reduce the amount of work for the kidneys by reducing the amounts of the substances in question.

On the other hand these tests are supposed to be of value in diagnosis, enabling us to distinguish the cases in which the glomerular functions are impaired, those in which the functions of the tubules are impaired, and the mixed forms in which both systems are involved. It is generally agreed that the excretory functions of the glomeruli are different from those of the tubules. These tests, however, are based on the further assumption that we know what these different activities are, and that we can test these individual functions by these specific substances. Here we have left the solid ground of fact (or views about which there is general agreement), and have embarked upon the sea of theory (or views about which there is a definite difference of opinion). Will our boat, the working hypothesis of these tests, prove seaworthy?

It should be noted in this connection that we know far too little about the physiology of the kidney as a whole, and less about the normal or abnormal functions of its different parts. Furthermore there is a distinct lack of correlation between the clinical observations and the autopsy findings in many cases. The autopsies generally show that we are dealing with mixed

cases by the time death occurs, where both the glomeruli and the tubules are involved, although in the more acute fatal cases one system or the other is apt to be chiefly affected. Important work is now being done in experimental nephritis on animals, but it is not yet entirely clear how far the results are applicable to the nephritides of man, which are due to toxins of a very different character. It will require much more work along all these lines before we can form really reliable conclusions. The functional tests must be studied more extensively in connection with other clinical evidence, both of these must be better correlated with autopsy findings, and some of the problems can be elucidated by animal experimentation. In the meantime the assumptions on which these functional tests are based represent the opinions of men who are leaders in the investigations along these lines, and they may be accepted as the best working hypotheses available.

According to these views water and lactose are eliminated chiefly through the glomeruli, while sodium chloride and potassium iodide are excreted by the tubules. There is less definite agreement as to the place of excretion of nitrogenous material; therefore, as far as the localization of the functional disturbance is concerned, nitrogen has less significance than the four other substances.

Inability of the kidneys to excrete lactose in a normal way seems pretty clearly to indicate an abnormal glomerular function. Cases of this sort may be divided into two classes, those which show polyuria and those which show oliguria. Polyuria is considered to be due to a hypersensitive condition of the glomerular vessels, while oliguria is due to a hyposensitive condition. The ratio of fluid output to intake determines which condition exists.

Iodide of potash seems to be excreted by the tubules, but this test is perhaps less reliable and conclusive than the other tests. Salt seems to be excreted chiefly by the tubules, but the question of the amount of salt excreted depends not only on the functional power of the tubules but to some extent on the activity of the glomeruli. Normally the tubular epithelium appears to have the power of concentrating the urine by excreting an excess of salt ingested, even if the amount of fluid ingested is not increased. If the fluid intake is increased an excess of salt would be taken care of, at least to a certain extent, even if the concentrative power of the tubules were impaired, because of the increased outflow of urine. Therefore in this test we must take into consideration both the intake of salt and of water, and the output of urine and its concentration. Furthermore in the type of abnormal glomerular action in which the vessels are hypersensitive, salt appears to act as a diuretic and to increase the amount of urine. The functional activity of the tubules as to salt excretion is, therefore, tested by adding salt to the diet in considerable amounts without increasing the amount of fluid taken. If the tubules are normal and the glomerular action is normal this excess is eliminated in a concentrated urine. If the glomerular vessels are normal or hyposensitive and the tubules are impaired there will be more or less salt retention. If the glomerular vessels are hypersensitive, the diuretic action of the salt may make the test less conclusive as to the functions of the tubules, although if the tubular function is much impaired some salt retention will probably be found under these conditions.

Bearing the significance of these functional tests in mind, we may now consider Case VI,—one of the most puzzling cases of cardio-renal disease that I have studied.

CASE 6. This man was a traveling salesman for shoes; 45 years of age. He was first examined September 3, 1912. His history gave no probable etiology for his present trouble. He had never used alcohol to any extent.

His present trouble dated from February, 1911,—19 months before I saw him. The best information obtainable about an attack which occurred at this time would seem to indicate that it was uremia accompanied by a temporary aphasia and paralysis of his right hand and arm which lasted several hours.

In November, about nine months later, he fell unconscious and had more convulsions. The diagnosis, made by a very good clinician, was again uremia. After a few days in the hospital he returned home. Since then he had been in fair health, but had not returned to business. He complained of more or less malaise, loss of strength, some headache, and occasional attacks of dizziness. There had been no dyspnea on exertion, or other cardiac symptoms. He had noticed nothing unusual about the urine, but had been obliged to pass it two or three times during the night for a good while.

Physical examination showed an enlarged heart, the left border being 2 cm. beyond the nipple line. The heart action was strong and regular. There was a short, fine, high-pitched systolic murmur at the aortic area, and a lower pitched, rougher systolic murmur at the apex. There was moderate arteriosclerosis of the peripheral arteries, and it seemed probable that the aortic systolic murmur was due to arteriosclerotic changes at the aortic valve. The other systolic murmur was characteristic of slight mitral regurgitation. Compensation was good. The aortic second sound was much exaggerated. The pulse was 100, regular, and of very high tension. The systolic blood-pressure was 275, and the diastolic pressure was 190. There was moderate edema of the eyelids and slight soakage of all subcutaneous tissues, but no edema of the lower extremities that could be ascribed to broken cardiac compensation. He had recently consulted a good oculist, who reported to me that the fundi were normal except for definite evidence of arteriosclerosis. The physical examination was otherwise negative.

A single specimen of urine at the examination September 3 showed a specific gravity of 1010, acid, a slight trace of albumen, and a few hyaline casts.

The twenty-four hour urine, two days later, showed 1440 c.c.; specific gravity, 1012; acid; a very slight trace of albumen; many hyaline and a moderate number of fine granular casts; no other abnormal constituents in the sediment.

He had been requested to record his diet for the twenty-four hours during which he collected the urine, and a calculation showed that he was taking about 2100 calories and 96 grams of protein. The output of urea was 21.6 grams for the twenty-four hours,—a smaller amount than would be expected from the protein intake. The diagnosis of chronic interstitial nephritis seemed to be definitely established. There was moderate arteriosclerosis and cardiac changes secondary to the nephritis and arteriosclerosis. With a history of what appeared to be two uremic attacks ten and nineteen months previously, and with the extremely high blood-pressure, this patient seemed to be in a very advanced stage of the disease. The cardiac compensation, however, was unusually good, and the danger seemed to be more on the side of inadequate renal elimination and uremia than in the direction of the circulation. I assumed that the high blood-pressure was probably due to retained nitrogenous waste products, and, as he was taking a diet that was too high in protein for his kidney condition, I expected a definite fall in the pressure on a lower protein diet.

In this expectation I was entirely disappointed. Further observation of this case showed that the first observation of a blood-pressure of 275 was unusually low for him. It was usually considerably above 300. The exact figures cannot be given, as the scale of the mercury manometer did not go above 300. He was first placed on a 70-gram protein diet, and this was gradually reduced until on Nov. 12 he was ordered a diet containing only 52 grams of protein. On the lower protein diet the blood-pressure was more often between 275 and 300 than above 300, but, as it was at times over 300 and as it was only 275 at the first examination, it is not clear that the lower protein diet had definitely reduced it.

In other respects, however, he was distinctly better. His pulse was generally lower, frequently down to 88. He was practically free from headache, felt stronger and more energetic, and described himself on November 26 as "better in every way." The urine improved. The amount and specific gravity remained about the same. The casts diminished and disappeared on October 8, about one month after treatment was inaugurated. The albumen disappeared on November 11. The urea fell from 21.6 grams to about 13 grams in twenty-four hours on the reduced protein diet. These conditions remained essentially unchanged until early in January, 1913.

On January 14 a specimen of blood was taken for analysis. The result was essentially normal, the uric acid, nitrogenous waste, and urea being only very slightly above the upper normal figures. Professor Folin stated that this analysis was inconsistent with the results obtained in a large number of cases of nephritis, and raised a question as to the diagnosis. It seemed possible that the reduction of the protein intake might have reduced the amount of nitrogenous waste material to what the kidneys could eliminate, and that under these conditions a normal blood analysis would be consistent with the existence of nephritis. In order to test this idea, I increased the protein in his diet from 52 to 90 grams and asked him to continue at this diet for a month, unless he became decidedly worse. Inside of a week he telephoned to say that he did not want the full protein diet, that he found it difficult to force himself to take it, and that he was not feeling as well. I asked him to do the best he could for two weeks and then report.

On February 27 the blood was taken again for analysis. It was estimated that he had taken an average of 80 grams of protein for twenty days. The blood analysis was practically identical with the first examination. The amount of nitrogenous waste in the blood had not increased with an increased amount of protein in the food. The figures of the two analyses are as follows:—

	Uric Acid.	Nitrogenous Waste.	Urea Nitrogen.	Protein in Food.	Pressure. Blood-
Normal	1-2	24-26	12-13	90 grams	150
Jan. 14, 1913	2.3	30	15	52 grams	270
Feb. 27, 1913	2.2	28	16	80 grams	295

Besides suffering a return of his symptoms to a moderate degree, as a result of increasing the protein in his diet, the urine at this time, February 27, showed a return of albumen and casts after they had been absent in a number of examinations during the previous three months. The urea, which on February 7 was 13 grams on a diet containing 52 grams of protein, was now 18 grams, on an 80-gram diet. It was demonstrated that he did not do as well on a high protein diet. He was now allowed 70 grams of protein daily for a time. On this he felt better than when he tried to take 80 or 90 grams, but not as well as on the lower diet. He voluntarily cut below 70 grams in a short time and on March 28 he was again placed on a 52-gram diet. The blood analysis showed that the increase of symptoms was not due to retained waste products.

As he was feeling well again on his 52-gram diet, I had some difficulty in persuading him to submit to further tests. However, on May 2, I induced him to allow Dr. Reginald Fitz to try the phthalein test. The elimination of the dye-stuff was 14% for the first hour, when normally it should be 50%; and for two hours it was 28% instead of nearly 70%. This test indicated a marked impairment in the elimination by the kidneys, and confirmed the diagnosis of nephritis. In addition, Dr. Fitz found albuminuric retinitis with a slight hemorrhage, which further confirmed the diagnosis. He also found the systolic blood-pressure over 300.

A short time afterwards I persuaded the patient to go into the Peter Bent Brigham Hospital, so that the other tests of the renal functions could be made. The lactose test showed some impairment of the function of the glomeruli. Whereas in 5 or 6 hours at least 60% of the lactose should be excreted, only 50% was excreted in 7 hours. That this abnormality was of the type with hypersensitive vessels was shown by a polyuria when the amount of water was increased and a diuretic action by an increase in the amount of salt.

The tabular function of the kidneys was shown to be fairly good, because the concentration of the urine was somewhat increased when extra salt was given, notwithstanding the diuretic effects of the salt, and because iodide of potash was eliminated in a normal manner. The nitrogen elimination was somewhat below normal, but this had been shown not to result in nitrogen retention on a moderately high protein diet.

The results of these special examinations may be summed up as follows: The diagnosis of nephritis was definitely confirmed. It was shown that nitrogen and salt and water could be eliminated in fairly good quantities, and the danger of retention of these substances with resulting oedema and uraemia seemed remote. In this case the vascular changes seemed to predominate and the danger would consequently lie in overtaxing the circulation. For this reason, since nitrogen and salt both stimulated the hypersensitive blood vessels, these articles should be given sparingly. The cause of the high blood-pressure was not demonstrated. The whole case seemed to be one in which vascular disease predominated over the renal condition, and was more or less independent of the nephritis.

As far as treatment of this case is concerned this investigation merely gave additional reasons for continuing the low protein and low salt diet which had already been inaugurated. As far as diagnosis is concerned, while it confirmed the diagnosis of cardio-renal disease, it reversed the diagnosis as to the predominance of the two elements, the renal and the vascular. I had assumed from the history and the evidence that the kidney functions were so seriously impaired as to constitute the real source of danger. It proved, however, that the renal functions are fairly satisfactory and that the danger will lie rather with the failure of the circulation. This investigation also offered a better prognosis than I should have dared to promise without it.

During the past summer this patient lived a moderately active out-door life on the coast of Maine. He continued his 52 grams of protein in a salt-poor diet. He called to see me at the end of November. He looked in perfect health, and said he felt better than for years. However, his pulse was 92, his systolic blood-pressure was over 300 and the diastolic pressure 190, and the left border of his heart was 1 cm. farther to the left. So far he has had no medication except occasionally a grain or two of phenolphthalein to keep his bowels open. The present indications are to continue the same dietetic regulations, to avoid anything beyond moderate exertion, and later, if necessary, use cardiac tonics when the heart begins to fail.

As we accumulate more data, we shall undoubtedly divide our cases of chronic interstitial nephritis into at least two or three clinical types. A better insight into these cases should lead to better treatment and more benefit. Even advanced cases of Bright's Disease of the ordinary type, may be benefited. If we can regulate the diet so that the nitrogenous output is within the capacity of the kidneys and the patient still gets sufficient nutrition, many of these cases may live in comfort for years longer than we have been taught to expect.

In conclusion,—what practical deduction can we draw from the consideration of the problems presented by these cases.

Cases of nephritis do better on a low protein diet, which requires less functional activity on the part of the kidneys. The degree to which the protein should be cut down depends on the degree of impairment of the renal functions. A rough estimate can be made on the basis of allowing 90 grams of protein in the lightest cases and about 40 grams in the severe or advanced cases. Intermediate grades should have an amount of protein between these extremes, varying according to the severity of the disease. If the symptoms improve and the blood-pressure falls, the functional tests are not essential; otherwise valuable information may be obtained from them, even in the present stage of our knowledge. With the accumulation of more data, the inferences that may be drawn from these functional tests will be more and more valuable.

In cases with oedema, and also in the cases in which the blood-pressure remains high although the protein in the food is reduced, the amount of salt should be reduced.

As a result of further study, we shall undoubtedly divide our cases of chronic interstitial nephritis into at least two or three clinical types.

A better understanding of these cases and a more careful study of the problems of nephritis will lead to more intelligent treatment and resulting benefit to the patient. A proper regulation of the diet,—not forgetting to provide a sufficient amount of nutrition,—will enable many of these patients to live in comfort for years longer than we have been taught to expect.

THE IMPORTANCE OF DIAGNOSIS AND TREATMENT OF PRIMARY SYPHILIS.

By C. Morton Smith, M.D., Boston.

The treatment of syphilis of the central nervous system, tabes and general paralysis is receiving widespread attention at present both in the clinic and laboratory. Syphilis was not recognized as the etiological factor in tabes and paresis until recently. These conditions were classed as para-syphilitic affections, *i.e.* syphilitic in origin but not in character. Mercury and iodides had slight control over the progress of the disease in these cases, and with no exact knowledge of how these degenerative changes occurred, it was claimed they were due to toxines or by-products of the infection and corresponded with the nerve changes after diphtheria.

Noguchi's demonstration of spirochaetes in the brain tissue of paretics and the successful inoculation of rabbits with the spinal fluid of tabetics shows beyond a reasonable doubt that

we are dealing not with the action of toxines but the direct effect of the spirochaeta pallida. However, the fact remained in regard to the slight success of the old-time treatment.

Some tabetics responded to intravenous injections of salvarsan, but with many it was inefficient and paretics were not improved. Attention was called by Camp to the fact that arsenic was not found in the cerebro-spinal fluid in cases that had received salvarsan intravenously. This is said to be due to the selective activity of the choroid plexus, which allows only certain substances to pass from the blood stream into the ventricles. Flexner's work on meningitis suggested intraspinal injections, and Swift and Ellis devised their method of preparing and introducing salvarsanized serum. Following their lead, much careful work is being done along these lines and the results already obtained amply justify a continuation of this method of treatment as the process seems to be arrested or perhaps cured in some, while other cases are relieved of distressing symptoms.

The object of this article is to emphasize the importance of early diagnosis and prompt energetic treatment, for therein lies the reasonable hope of safeguarding the patient against these serious nerve lesions already mentioned.

During the comparatively short time that salvarsan has been in use a fairly definite method of application has been developed whereby it seems possible to sterilize the individual before the nervous system has been invaded. When energetic treatment with salvarsan and mercury is begun during the early primary stage the disease can be aborted in a large percentage, if not in all cases. If treatment is delayed until the secondary stage or later, it is still usually possible, but more difficult, to bring about the desired serologic change.

Syphilis may invade the central nervous system during the secondary stage and may or may not cause clinical symptoms. Hence, Bernstein advocates an early lumbar puncture in all cases of syphilis to determine the cell content of the spinal fluid, this being a more accurate guide to cerebro-spinal syphilis than the Wassermann reaction on blood serum or spinal fluid. He also favors a routine intraspinal injection of salvarsanized serum as a precautionary measure.

There is still need of an intimate clinical knowledge of syphilis although the diagnosis of a primary lesion no longer rests on clinical examination alone. Spirochaetes can often be demonstrated in primary sores only a few days old, either by the dark-field microscope, or in stained preparations. The latter is best suited for the general practitioner as no special apparatus is needed.

Many patients are exceedingly optimistic regarding their own possible primary lesion and lose valuable time before seeking advice, believing it to be only a "cold sore" or "chafe." Further time is also lost in some cases if we can believe the patient's statement that "the doctor said it was a soft sore and did not amount to anything," and later when a roseola appeared, explained that "it had backed up into the system."

In the out-patient department of a large hospital the writer has been surprised at the small number of patients with primary syphilis or questionable lesions seeking or sent for advice or treatment. Not only does the welfare of the patient call for an early diagnosis, but the safety of the public also demands prompt recognition and healing of primary sores. Many small epidemics have been traced to an unrecognized primary lesion of the finger, lip or elsewhere. Numerous instances of this sort are on record, one of the latest being Schamberg's report of practically a dozen cases of infection about the mouth traced to a young man with a primary lesion of the lip who attended a party where kissing games were played.

There is still the same old necessity for a positive diagnosis before beginning treatment, but with the means already mentioned it is often possible to make a definite statement at the first visit. Failing to find spirochaetes the Wassermann reaction usually becomes positive three or four weeks after the appearance of the sore.

It is also important that the treatment begun early should be continued until a serologic as well as symptomatic cure is obtained. The Wassermann test is of value to the clinician as a measure of treatment, as well as an aid to diagnosis. A weakly positive reaction in a known syphilitic, or where the reaction has been strongly positive is an indication for further treatment. In a case for diagnosis, lacking history and clinical evidence, a weak reaction should be disregarded.

The treatment of early syphilis should comprise three to six intravenous injections of salvarsan given at ten-day or two-week intervals and supplemented by mercury, preferably by intramuscular injection. The effect is determined by a Wassermann test six to eight weeks after treatment has been omitted. If the test is positive the course of injections should be repeated. When such treatment is begun in the primary or early secondary stage a permanent negative test should be possible in six to nine months in the majority of patients.

By early diagnosis and active treatment we can hope to accomplish the following:—

1. Abort the disease in a large number of cases.
2. Protect the family and community.
3. Prevent the probability of transmission of syphilis to the offspring, some of whom may become a burden to the state.
4. Lessen the possibility of the so-called neuro-recurrences.
5. Probably safeguard the individual against late nerve syphilis,
6. Thus diminishing the likelihood of their becoming useless members of society, if not state charges.

Clinical Department.

A CASE OF BONE CYST OF THE OS CALCIS.

By Wm. Pearce Coues, M.D., Boston.

Bone cysts other than those found in the long bones are of such uncommon occurrence that the report of the following case is of interest. In a cursory examination of the literature on this subject, I have been unable to find a similar case.

A. L. 14 years, was seen Sept. 5th 1913.

Past History. The mother and father are living and well; one brother died in infancy of gastroenteritis; one brother and two sisters are living. One of the sisters is of a nervous temperament, with much digestive trouble. The patient's past history is not important concerning this trouble.

Present Illness. There is trouble in the other heel, the right, since last May, when he fell directly on the heel while doing gymnasium work. This foot bothered him off and on since, with considerable aching at times. The pain especially noted after walking or running. Absolutely no symptoms from the left heel, the seat of the bone cyst.

Examination showed a well nourished boy. The right heel was painful to pressure over the epiphysis of the os calcis. There was no abnormal thickening made out. X-ray of this foot showed an old separation of the epiphysis of the os calcis.

Bone Cyst.
Left os calcis. Male, 14 years.

An x-ray of the left foot was taken for comparison. This picture showed a bone cyst of the body of the os calcis. The whole of the central portion of the body of the os calcis was involved, the thinning extending down apparently quite close to the plantar surface of the bone. Immediate intervention was not advised, but observation at short intervals with radiographs for comparison with the first picture, and operation, should the slightest symptoms arise, was urged. Some two months after this the patient was heard from. The trouble had given no symptoms up to that time.

Medical Progress.

A REVIEW OF THE PROGRESS IN PATHOLOGY FOR 1913.

By S. B. Wolbach, M.D., Boston,

Assistant Professor of Bacteriology, Harvard University Medical School.

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It is hardly to be expected that notable contributions in gross and microscopic pathological anatomy will be made each year, because of the highly developed state of our knowledge on these subjects. The bulk of the work done along these lines is too highly specialized to be of general interest. Some of the most notable contributions to pathological histology, which represent many years of investigation, have been made by Mallory, in his text-book, "Pathologic Histology." Of special note are his contributions to the histology of early syphilitic lesions, trichinella spiralis, the histology and classification of tumors, infectious lesions of the heart, blood vessels and kidneys and the pathology of the liver.

The contributions in the field of experimental pathology from America are perhaps more noteworthy than those from abroad where the corresponding type of work is done in closer connection with the clinic, and in the main is represented by diagnostic and metabolism experiments upon patients.

TUMORS.

A valuable contribution for those who deal practically with tumors is to be found in Mallory's text-book, "The Principles of Pathologic Histology." This book contains an admirably simple and adequate classification upon a histologic basis, and the different tumors are well illustrated and described with great clearness.

Rous and Lange (*Journal of Experimental Medicine*, Vol. 18, No. 6, p. 651) report the find-

ing of a third transplantable chicken tumor due to a filterable cause. This third tumor is a sarcoma having characteristic intracanalicular arrangement in relation to blood sinuses which accompany the growth. Like the other two chicken tumors described by Rous, a spindle cell sarcoma and an osteochondro-sarcoma, this one is due to an agent which will pass through Berkefeld filters.

Henke and Schwarz (*Deut. Med. Woch,* Vol. 40, No. 6, p. 67) claim to have transmitted a mouse carcinoma by injection of cell-free filtrates. The tumor was one propagated by them from a spontaneous mammary carcinoma of unusual virulence. The technic was to grind up the tumor in sterilized salt solution by means of sand. The emulsion was centrifugalized and filtered through ordinary filter paper. The filtrate is said by the authors to be cell-free.

Tyzzer (*Journal of Medical Research,* Vol. 28, No. 2, p. 309) has contributed some valuable experimental evidence concerning factors in the distribution and growth of tumor metastases. Tyzzer made use of the carcinoma of the Japanese Waltzing mouse, which was originally propagated by him from the spontaneous tumor discovered several years ago. In all, 157 inoculated animals were utilized and manipulated in various ways. He found that metastases may be artificially produced by the manipulation and massage of the implanted tumor, and that this is accomplished as readily during the early development of the tumor as in the later period in which metastasis naturally occurs. Incomplete operations involving the incision of implanted tumors do not increase the incidence of the metastases, but the metastases that result grow more rapidly if a large amount of the original tumor mass is removed. Radical operations involving removal of all the tumor, when performed just prior to the period in which metastasis commences, results in a temporary freedom from this complication, even though recurrence commonly occurs. The clinical inferences to be drawn from this work are obvious.

HODGKIN'S DISEASE.

Renewed interest in the etiology of this poorly defined disease is awakened by reports of the cultivation of a diphtheroid bacillus. The first account is by Negri and Mieremet (*Cent. f. Bak. Orig.,* Abt. 1, bd. 68, heft 3-4, p. 292) who cultivated from two cases, a bacillus having distinctive cultural and morphological characteristics. Their animal experiments on guinea pigs, rabbits, mice and monkeys did not give conclusive results, and for the greater part were negative. In the introduction to their paper, the authors call attention to the fact that Fraenkel and Much found bacilli, morphologically similar, in cases of Hodgkin's disease, by the antiformin sedimentation method. Eleven cases which were proved not to be tuberculosis yielded the diphtheroid bacillus. A number of other observers confirmed this work before the time of publication by Negri and Mieremet. The authors believe their cultures to be identical with the bacilli found by Fraenkel and Much.

In this country, apparently stimulated by the work of Fraenkel and Much, and independently of Negri and Mierement, Bunting and Yates (*Arch. of Internal Medicine,* Vol. 12, No. 2, p. 236) report the cultivation of the diphtheroid organism from three cases of Hodgkin's disease. In later publications (*Journal American Medical Association,* Vol. lxi, No. 20, p. 1803, and Vol. lxii, No. 7, p. 516) they report inoculation experiments in five monkeys which reacted in a manner suggestive of Hodgkin's disease. The authors lay stress on the fact that the blood picture in these monkeys was similar to that which is found in man in the early stages of the disease.

Billings and Rosenow (*Journal of the American Medical Association,* Vol. lxi, No. 24, p. 2122) report the cultivation of the same bacillus in twelve cases. No animal experiments are recorded. The cultures were utilized for vaccine treatment of the disease with results suggestive of improvement.

Steele (BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. clxx, No. 4, p. 123) reports the finding of the same bacillus from a case of Hodgkin's disease, and from a case of lymphatic leukemia.

It is difficult to appraise the importance of these papers. They are certainly highly suggestive that the commonest form of chronic glandular enlargement known as Hodgkin's disease is infectious and due to a bacillus closely related to the diphtheria bacillus on the one hand and the tubercle bacillus on the other. The animal experiments so far recorded cannot be taken as conclusive; they are merely suggestive and the lesions obtained are such as would result from an extremely attenuated tubercle bacillus or even by attenuated pyogenic bacteria. It is true that the lymph nodes draining the regions inoculated show chronic inflammatory changes and necrosis, but it must be remembered that the inoculations were repeated several times in the same animal. The metastases of the lungs, liver, heart and pancreas were in the nature of abscesses and did not simulate the metastatic lesions in man.

In this connection one must also take into account that diphtheroid bacilli are frequently encountered in human tissues. The most notable instance is in leprosy, where they have frequently been encountered in all parts of the world (Wolbach and Honeij, *Journal of Medical Research,* Vol. xxix, No. 3. p. 367). These observations will undoubtedly stimulate research regarding the occurrence of bacilli in normal and diseased tissues, other than Hodgkin's disease. In the absence of a perfectly characteristic reaction in animals, proof depends on indirect methods, such as the obtaining of

characteristic immune reactions and statistical studies.

COMMUNICABLE DISEASES.

Non-Infectious Tick Bite Disease. Todd in 1912 (*Canadian Medical Association Journal*, Vol. ii, No. 8 and No. 12) calls attention to a peculiar disease of children associated with the bites of ticks. The tick is the same one that transmits spotted fever in Montana. The symptoms are those of an acute ascending paralysis. Recovery takes place after removal of the ticks.

Bishop and King (*Journal of Economic Entomology*, Vol. vi, No. 2) in a study of the spotted fever tick record nine cases of paralysis in which the symptoms subsided rapidly after the removal of the ticks. They know similar cases reported from Wyoming.

Eaton (*Australasian Medical Gazette*, Vol. xxxiii, No. 17) reports the case of a child with temperature and paralysis of the legs and thighs, who recovered rapidly after the removal of a tick which was attached over the right scapula. He quotes other similar cases noted by Cleland in Australia.

It is hardly possible that a disease of this nature could be caused by an infectious agent, but coming from such widely different sources, it is not possible to doubt the accuracy of the observations, and we must accept the fact of a new disease, caused by bites of ticks, and probably dependent upon the injection of toxic substances.

Verruga Peruviana, Oroya Fever, Uta, Strong, Tyzzer, Brues, Sellards and Gastiaburu (*Journal of the American Medical Association*, Vol. 61, No. 19) give a preliminary report of the first expedition to South America from the Department of Tropical Medicine of Harvard University. They have shown that verruga peruviana and oroya fever are separate diseases, contrary to the generally accepted idea that the latter is an acute stage of the former. They accept as a cause of the diseases bodies found in the red blood corpuscles, originally described by Barton, Gastiaburu and Nicolle. The nature of these bodies has been disputed but Strong, Tyzzer and their associates have definitely decided that they are parasitic in nature and have created a new genus, Bartonia, for these parasites. The authors have succeeded in transmitting verruga peruviana to animals,—monkeys, dogs and rabbits. An inoculation experiment done on a volunteer produced only local papules. There was no fever, no eruption and no blood changes, such as occur in oroya fever.

Uta is a disease known from prehistoric times in Peru and is a destructive granulomatous process involving the face. The members of the expedition have found the parasite of this disease, which is a leishmania.

(To be continued.)

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY FRANCIS S. WATSON, M.D., BOSTON,

AND

PAUL THORNDIKE, M.D., BOSTON.

KIDNEY.

Infantile Kidney. Geraghty and Plaggemeyer.[1] Three thousand, nine hundred and forty autopsies at the Johns Hopkins Hospital show three cases of the above type where a large hypertrophied kidney existed on one side and a small so-called infantile kidney on the other side.

CONCLUSIONS.

The diagnostic points in determining the presence of a kidney of the type presented above, may be summed up briefly as follows:

1. When disease is present in the larger, hypertrophied kidney, the total function, as estimated by phenolsulphonephthalein, is decreased, and the function of the diseased kidney is usually greater than the function of the supposed healthy kidney.
2. The function of the infantile kidney shows marked decrease, although the urea percentage and general character of the urine is normal, while the amount of urine secreted is relatively small.
3. Pyelography is of doubtful value, since the size of the kidney pelvis is usually not a reliable index of the size of the kidney.
4. In persons not too stout it may be possible to secure Roentgen-ray shadows, showing the presence of a diminutive kidney.

In Case 7 considerable diagnostic help was obtained from the Roentgen ray, which showed a very small kidney shadow, less than half that of the opposite side. This, taken in conjunction with the functional findings and the character of the urine, was of considerable diagnostic aid.

In conclusion, it may be emphasized that kidneys of the infantile type are a menace to the surgeon if the opposite kidney is the seat of the disease. The character of the urine may be normal in appearance and the urea concentration or percentage may be high. The recognition of this anomaly may be extremely difficult, and its presence can be suspected only when function estimations are carried out.

Tests of Renal Function. The Blood-kidney Index in Kidney Disease. Bromberg[2] says that the chlorides in the blood and in the urine afford a most valuable means of estimating renal function. He says that normal concentration in the blood is just half that in the urine, and he calls this ratio of 1 to 2 the hemo-renal index. He claims that a change in this index points to trouble sooner than any other sign, and that as

soon as this ratio becomes less than 1 to 2, some serious disturbance should be looked for. If the ratio becomes less than 1 to 1.5, operation of any sort is contraindicated. The author has made a small electric apparatus by which he computes easily the amount of chlorides in the blood and urine by comparing their electric conductivity. This apparatus is illustrated and described. It requires only a few drops of blood and of urine for the performance of the test.

Fluorescein Test. Strauss,[3] in thirty cases, found that if one gram of fluorescein-sodium be given by mouth, a fluorescent urine was passed in from ten to twenty minutes, and that this fluorescence disappeared after thirty-five to forty hours. He thinks these facts may be made the basis of a valuable renal test which will be extensively used because the drug is taken by mouth instead of under the skin, and the technic is so much simpler than that of the tests now commonly in use.

Chromo-ureteroscopy. Thomas[4] believes that chrono-ureteroscopy, based on the employment of indigocarmin, is the most valuable single test for renal sufficiency or insufficiency that we possess, because it is the most practical, affording the same diagnostic advantages as the functional tests dependent on bilateral synchronous ureteral catheterization, the technic and determination of which are tedious, complicated and consume much more time. Comparative observations of the onset and intensity of the color elimination have never failed to determine the functional sufficiency of the supposedly normal twin organ in view of operative intervention. It is of no value in movable kidney, in the presence of ureteral kink or hydronephrosis, pyelitis, essential hematuria, or early tuberculosis. It is of value in the differential diagnosis of hemorrhage and chronic interstitial nephritis from other types of the disease.

URETERO-VESICAL VALVE.

Braasch[5] discusses the advisability of cutting the uretero-vesical orifice either through a suprapubic incision or through an operative cystoscope for the purpose of removing the stones from the lower end of the ureter. He reiterates the fact that this uretero-vesical valve exerts, under certain conditions, a check-valve action which, however, is of questionable value in preventing a reflux of urine from the bladder. He reports his own experiments and concludes as follows:

"Tentatively we conclude that in experienced hands there is little or no danger in human beings from the operation of meatotomy through the operative cystoscope, either as regards immediate hemorrhage or sepsis, or as regards late results from injury to the kidney.

"The protection from reflux is affected at least as much by physiological function of the ureter as by the check-valve action at the meatus. These together, rather than the uretero-vesical valve alone, constitute the 'factor of safety' which prevents reflux.

"The ureter alone, almost without exception, sufficed experimentally to prevent reflux, even if the uretero-vesical valve had been destroyed. Section of the valve appeared to leave the protective ureteric function intact.

"The above data would confirm the opinion expressed by others that renal infections are seldom if ever ascending, but rather hematogenous in origin."

Intra-dural Route, Anastomosis, for the Relief of Paralysis of the Bladder. Frazier and Mills.[6] The authors describe in detail a remarkable operation of nerve-root crossing by which an anastomosis between the first lumbar and the third and fourth sacral nerves was accomplished. They claim that such a procedure has a place in surgery, especially in the paralyses of the bladder and rectum following trauma, and they conclude their admirable paper in part as follows:

"If this new plan of procedure had no other application than for the relief of the vesical palsy it would still have a wide and important field. That it is based on a reasonable hypothesis has been proved by experimental observations on the lower animals; that it is a justifiable risk no one will gainsay; that it gives promise of attaining its object has been demonstrated by the fact that our patient has already gained some control of the bladder."

PROSTATE.

Radium in the Treatment of Prostatic Cancer. Pasteau and Degrais.[7] At the present time, when surgery offers so little relief for prostatic cancer and when radium is being hailed as cancer's most powerful enemy, this article is of interest. The authors have used radium on fifteen patients, among whom were two physicians. The radium was introduced into the full bladder by means of a narrow tube, which is described. It is left in place three or four hours, and six exposures are made at intervals of three to six days. Similar exposures may be made through the rectum or through an incision in the perineum or into the bladder from above, as well as through the ureter. Improvement is claimed in every one of the fifteen cases.

A New "Punch Operation" for Small Prostatic Bars and for Contractures of the Prostatic Orifice. Young[8] describes an instrument for punching out pieces of tissue for the relief of obstruction due to small prostatic bars or to contractures or lobules not associated with lateral hypertrophy of the prostate. He says that in such cases the operation is radical, does not have to be repeated, does not require subsequent urethral dilation and does give lasting cures.

The Human Prostate Gland at Birth. Lowsley[9] spent many months studying serial cross sections of the prostate of a baby. The results of his work are embodied in a wax model which maintains exactly the normal relations of the

structures studied, and which demonstrated admirably certain facts of real surgical value. For example, two large lobules in the outermost portion of the lateral prostatic globes send branches in a direction away from the bladder. All other lobules extend towards the bladder. In most successful enucleations the two forward branches are found extremely adherent and must be cut across. Again, he shows how cancer and hypertrophy may exist together and how the hypertrophied lobe may be so distinctly capsulated as to resist the invasion of cancer and so oblige it to travel in other directions. This is a most interesting and instructive paper of great value.

TESTICLE.

Paths of Infection in Genito-urinary Tuberculosis. Walker [10] offers evidence (clinical, pathological and experimental) which he thinks goes to show that tuberculosis infection of the testis takes place by extension down the cord and not through the blood stream. He does not deny that the latter form of infection may exist, but says it is rare. The evidence he quotes as follows:

"Clinical evidence: 1. It is extremely rare to find tubercle of the epididymis without discovering some indication of disease of the prostate or the vesicles. 2. Prostatic tubercle is not infrequently found without any lesion of the testicle. 3. The appearance of a tuberculous epididymitis is often preceded by symptoms of prostatitis or vesiculitis—the so-called prodomata of tuberculous epididymitis. 4. The earliest signs of tuberculous disease are found at the lower pole of the epididymis. This is the first position which opposes the line of march of the invading organisms. 5. Tuberculous disease of the testicle is analogous to acute infections which are known to have been produced by extension from the urethra. The ordinary type of tuberculous epididymitis has no analogy to the hematogenous orchitis of mumps. Pathological evidence: 1. Lesions of the testicle without disease of the prostate are rare whereas tuberculous lesions of the prostate are not infrequently found unaccompanied by disease of the testicle. 2. When tubercle of the testicle is found in association with tubercle of the prostate, the lesions in the prostate generally have the appearance of being older than the lesions in the epididymis. 3. Tuberculous nodules in the lower pole of the epididymis usually appear older than those in the upper pole. They are the first to soften and break down. Experimental evidence: 1. Microorganisms and inanimate granules are rapidly absorbed from the urethra and carried to the testicle. 2. A tuberculous epididymitis may be experimentally obtained by inoculating the urethra, after having damaged one of the testicles." This work is recorded because it is so at variance with commonly accepted beliefs.

Transplantation of the Testicle. Lespinasse.[11] The author reports a most remarkable case in which slices of a recently removed healthy testis were transplanted between fibres of the rectus muscle and also into the scrotum of a man who had lost both testicles and was impotent. "On the fourth day after the operation, patient had a strong erection accompanied by marked sexual desire. The man has, since the operation, regained his sexual powers completely, both as to desire and as to ability. Furthermore, these powers have remained present for two years." A description of the technic of the operation follows

"A man, aged 38, consulted me in January, 1911, to find out if anything could be done for the loss of both testicles. One testicle which had been retained was removed during a hernia operation; the other had been lost by an accident about two years previous to his consultation with me. He was unable to have intercourse, which was his chief reason for coming to me.

"A testicle from a normal man was easily obtained. In fact, I was surprised at the number of testicles that are available for transplantation purposes.

"The two patients were anesthetized at the same time, and the recipient prepared as follows: The scrotum was opened high up and a bed prepared in the same way as we prepare the bed for the reception of an undescended testicle. Hemostasis was carried out with great care. Another incision was made over the rectus abdominalis muscle; this incision was carried down through the skin and fascia. The fibres of the rectus muscle were exposed and these fibres separated by opening an artery and forceps plunged into the muscle. Hemostasis was carried out and then the testicle to be transplanted was removed. It was immediately stripped of the epididymis, cord and tunica vaginalis, and then sliced transversely to its long axis, these slices being approximately 1 mm. in thickness. The central slice and the one next to it were taken out and placed among the fibres of the rectus muscle. Another slice was placed in the scrotum. The wounds were closed without drainage and healed by first intention throughout."

SEMINAL VESICLE.

Belfield.[12] In these two short articles, illustrated by radiographs, the author describes the technic by which collargol or some equivalent metallic compound may be injected into the vas deferens and so up into the seminal vesicle through a small scrotal incision opening into the vas just above the testis. The incomplete work Belfield had done has already demonstrated several important facts, namely, the existence of a peristalsis of the ampulla and vesicle into the prostatic urethra and sphincteric closure of the ampulla and vesicle; the occasional blockade of the ejaculatory duct," converting the vas and vesicle into a retention cyst."

GONOCOCCUS.

Gonococcus Vaccines and Glycerine Extracts of the Gonococcus in the Diagnosis of Gonorrheal Infections. G. C. Shattuck and W. S. Whittemore.[13] Persons suffering from infectious diseases often demonstrate certain changes in the blood serum. These changes are believed to be responsible for certain reactions, like that of tuberculin, and a few investigators believe they have found in the serum of gonorrheal persons changes which they believe to indicate a specific reaction for gonorrhea. The authors of this valuable article hoped to find "a reliable method of diagnosis for gonorrhea by means of a specific reaction." Their conclusions follow:—

"*a.* From published work of others referred to above:—

"1. Reactions thus far observed after injections of gonococcus vaccine have not been clearly specific for gonorrheal infection.

"2. The reactions seem to show a selective action in some types of gonorrheal disease.

"3. Local reactions after injections are common in non-gonorrheal cases. They are not valuable for the diagnosis of gonorrhea or for demonstration of its cure.

"4. Focal reactions are seen frequently in active gonorrheal arthritis and salpingitis; but, whereas they have been observed in cases showing no other evidence of gonorrhea, their diagnostic value is small.

"5. A general reaction is seldom noticeable, and it may be easily simulated by slight symptoms due to other causes. It has *per se,* no diagnostic value.

"6. Gonococcus vaccine autolyses rapidly, and thus undergoes changes little known.

"*b.* From writers' work:—

"1. The concentrated vaccine used by the writers showed no superiority for diagnostic tests.

"2. It produced in gonorrheal and in control cases a local lesion like that of a chemical irritant. We think that autolysis may have been a factor in producing the supposedly irritating properties of our vaccine; that the changes in the vaccine may have prevented it from producing a specific reaction; and that the unsatisfactory therapeutic effects of gonococcus vaccine may, perhaps, be traceable to autolysis.

"4. Glycerine extracts of the gonococcus inoculated by the method of von Pirquet caused, in a few cases, the formation of peculiar papules which may have represented a specific reaction. Most of the cases showed no definite reaction.

"5. Although our tests were negative in the main, and although the work of others using similar methods has yielded unsatisfactory results for diagnosis, we desire to emphasize our belief that failures serve as guideposts to progress, and that present knowledge justifies the hope that a valuable diagnostic test for gonorrheal infection may yet be devised through improved methods of preparing vaccines or extracts of the gonococcus.

"It is with great pleasure that we express our thanks and obligation to Dr. Albert E. Steele for preparing the vaccines and the extracts which we used, and to Dr. Hugh Cabot, as well as to many other members of the staff of the Massachusetts General Hospital, for the opportunity to study their patients."

An Easy Method for the Cultivation of the Gonococcus. G. F. Clark, U. S. N.[14] Clark uses Thalmann's medium and human blood serum. His technic follows: "Five hundred grams of lean, finely minced beef are placed in 1000 c.c. of distilled water and allowed to stand over night in an ice box. It is then filtered and the filtrate made up to 1000 c.c. with distilled water. To 100 c.c. of the beef juice add 1½ grams of agar and boil for fifteen minutes. Then add 2 grams of glucose and bring the reaction to plus 0.6 by addition of NaOH. Tube, sterilize, slant and incubate over night. No peptone or salt is required. To each tube of the medium add 4 to 5 drops of fresh, sterile human blood-serum. After washing the glans penis with alcohol and wiping off any secretion at the meatus, a drop or two of the pus is expressed from the meatus and inoculated on the medium. It is best to incline the test-tube prior to inoculation, so that the serum will flow over the entire surface. The pus should be evenly spread. In sixteen hours the colonies of gonococci can be readily seen as small white points. Toward the bottom of the tube the colonies are larger, sometimes almost as large as staphylococci when grown in ordinary mediums."

Complement Fixation Test. Schwartz and McNeil.[15] The authors state their belief that the complement fixation test is simpler than that of isolation of the germ in culture and they think the possibilities of error are less. They detail the following figures:—

A positive reaction in 31.4% of cases, clinically post-gonorrheal; a positive reaction in 54.8% of 62 patients, infected within 3 years; a positive reaction in 13.2% of 165 patients, clinically cured after three months.

EXCRETION OF FORMALDEHYDE.

An Experimental Study of the Antiseptic Value in the Urine of the Internal Use of Hexamethylenamin. Hinman.[16] "Hinman finds that hexamethylenamin is easily converted into formaldehyde in an acid medium but not in an alkaline one. The amount of excretion in the urine is influenced by the size and frequency of the dose and the changes that occur in the acid contents of the stomach. Disease of the kidney has no influence on the formaldehyde content of the urine. Doses smaller than fifteen grains three times a day cannot be expected to produce much antiseptic action.

Excretion of Formalin in the Urine and Inquiry into the Accuracy of Burnam's Test.

Smith.[17] In our last report, published in this JOURNAL (January 2, 1913) mention is made of the work of Burnam and L'Esperance. In the paper under consideration Smith discusses Burnam's work, and from a study of 213 specimens of urine obtained from fifty persons, draws the following conclusions:—

"1. Burnam's test for formaldehyde in urine is definitely positive when this substance is present in the strength of 1 part in 40,000 or more.

"2. The urine should be examined as soon as possible after it has been voided. A negative test at one time does not prove that formaldehyde is never liberated.

"3. From the evidence at hand, we believe that formaldehyde is liberated from the hexamethylenamin by the acids of the urine, not by a specific function of the renal epithelium.

"4. This process may take place in the kidney, but is continued in the bladder.

"5. Litmus paper, as an indicator of the true acidity of the urine, was unreliable in about 25% of the cases examined.

"6. The degree of acidity of urine, as measured in terms of its hydrogen ion concentration, showed in our cases a constant relation to its power to set free formaldehyde. The higher the acidity, the greater was this power.

"7. The requisite amount of acidity, which is not great, is present in the majority of normal urines, and can be secured in almost all cases by the use of boric acid or sodium acid phosphate.

"8. The writer disagrees with the statements of Burnam and L'Esperance that only 50 to 60% of individuals break up urotropin. Examination of 213 specimens from 50 individuals showed that only in the urine of one case was formaldehyde never found."

VALUE OF NEPHRECTOMY IN CASES OF UNILATERAL RENAL TUBERCULOSIS.

By Dr. J. Z. Barrie, of Lyons, France, 1912. (A Rey, 4 Rue Gentil, Lyons.)

This very thorough and interesting monograph rests for its material upon a number of patients selected from the clinical records of one of the most careful analyzers of clinical material in France, Dr. Rafin, which embraces a considerable number of patients whose records are complete both as to the conditions preceding operation and to the late results of the nephrectomies.

The reporter of these observations precedes them by saying that the diagnosis of unilateral renal tuberculosis was most carefully tested before operation and also afterward, and divides the work that he details for the further aspects of the cases as follows:—

What is the duration of renal tuberculosis when no operation is done?

Then the question of spontaneous cure of renal tuberculosis is considered in the light of hitherto published evidence. In a third chapter the question is considered, "Does the disease in one kidney threaten involvement of its fellow organ?" And in connection with this question the results of the study of the immediate and late results of nephrectomy in cases of unilateral renal tuberculosis are considered.

Finally, the comparison of the advantages gained by the removal of the focus of tuberculous disease is made with the disadvantages of leaving such a focus undisturbed by surgical intervention. In 91 cases observed and whose histories until death were known, death took place at the following times after the beginning of the malady in the cases in which no operations were done.

In the first year death occurred in 19.
In the second year death occurred in 10.
In the third year death occurred in 15.
In the fourth year death occurred in 8.
In the fifth year death occurred in 7.
In the sixth year death occurred in 13.
In the seventh year death occurred in 6.
In the eighth year death occurred in 5.
In the ninth year death occurred in 2.
In the tenth year death occurred in 1.

From the tenth year to the sixteenth year there were 5 deaths.

Of the surviving patients there were 77.

Of these, 18 had had the disease for 1 year to 2 years; 19 had had the disease from 3 years to 5 years; 28 had had the disease from 6 to 10 years; and 12 for more than 10 years.

The average time of death in the cases in which the patients had died was four years and six months, and the average time of life reported in the cases in which the patients were still alive was 4 years and 9 months.

The cases are further analyzed with regard to duration of life or occurrence of death in women as compared with men and also according to the ages of the patients attacked.

The first of these analyses indicates that death comes later in the cases of women than of men.

In considering the question of spontaneous cure of renal tuberculosis, he examines the cases from two points, these are the conditions found at autopsies and carefully established clinical observations.

Data are given of cretaceous areas surrounded by fibrous capsules in the kidneys, which have been interpreted as being tuberculous processes, either healed or en route to become so in some instances, while in other cases kidneys have been found with areas of cicatricial tissue which have been variously interpreted, but concerning which there is lacking definite proof of their being end results of a tuberculous process. The general consensus of opinion is that a completely healed tuberculous process, if it occurs at all in the kidney, is of very rare occurrence, and many authorities deny the existence of such a condition.

The clinical facts are almost as rare as are those which point to the possibility of a spontaneous cure in cases of renal tuberculosis. One

instance reported by Wildbolz seems to be pretty well established and by all the known tests by which the presence or absence of the malady can be discovered.

He calls attention to the deceptive condition that may be presented in the cases in which the kidney has the ureter closed and undergoes caseous atrophy under a tuberculous process, and in which cases cured may be absolutely simulated and yet the process still be present in the shut-off kidney.

Barrie then takes up the question of the effect or the transmission of the malady from one kidney to the other. He gives statistics which seem to show that in cases in which one kidney is infected the disease is transmitted to the opposite organ in a considerable number, rather than from some extra-renal focus, and calls attention to three series of facts which indicate the involvement of the second from the first kidney infected.

Israel reports, for instance, that in the series of cases published by him there were more cases of bilateral renal tuberculosis in which the infection was confined to the kidneys than there were, or those in which there was an extra renal focus of the disease,—this in bilateral cases.

If this fact be true it would point to the greater frequency of the transmission of the infection from one kidney to its fellow than to the second kidney from any extra renal focus.

The second fact cited is that when one kidney is removed there is a decidedly lesser chance that the second one will be infected than when the two organs are allowed to remain.

In considering the question of cure in unilateral cases by means of nephrectomy the number of cases in which cure can be definitely established is as 32.0% of the whole number operated.

In five of these cases the cure has been demonstrated by testing the patients more than eight years after operation. In 32 cases the cure is established and endures from five to eight years.

Later in the report the influence of nephrectomy upon the bladder in unilateral cases is given.

Of 52 cases in which careful observations were made there were 5 in which no benefit was derived on the part of the bladder from the nephrectomy; in 43 there was a return to the normal subjective condition of the bladder promptly; in 9 it occurred slowly. With regard to the condition of the urine following nephrectomy the following statements are made:

In 35 of the cases the urine became and remained perfectly clear after the operation; in 8 others it did not.

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Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

MEETING OF THE MEDICAL SECTION JANUARY 21, 1914, AT THE BOSTON MEDICAL LIBRARY.

L. H. SPOONER, M.D., SECRETARY.

Dr. Horace D. Arnold read a paper entitled,

SOME PROBLEMS IN NEPHRITIS.*

DISCUSSION.

DR. H. A. CHRISTIAN: We are indebted to Dr. Arnold for his presentation of this important subject, presented largely by means of the review of a few very carefully studied cases, some observed for a long time. I would like to emphasize at this time the importance of such observations on the part of practitioners. Chronic nephritis is a common disease, so all have the opportunity of observing it. It is a disease of long duration, consequently the practitioner has a distinct advantage over the hospital physician in its study. Being a disease of long duration, it is the private patient, who is followed year in and year out by the general practitioner, and not the hospital patient, who comes for a brief time and is frequently then lost sight of, who furnishes the best opportunity for study. Furthermore, it is important that the patient under investigation should be intelligent and well to do, because intelligent coöperation on the part of the patient is necessary and because it is only among the well to do that the opportunity is afforded for continued use of special diets. So the well-to-do individual of intelligence observed for a long time is almost a requisite for such a study. At this time I wish to emphasize the very great importance to all of us of following these patients through the course of their disease, and when they die, of securing autopsies in order to know the exact condition in the kidney about which the physician has been speculating over a period often of years. Only a very few carefully observed cases of this nature have been recorded with autopsy findings.

Dr. Arnold has presented to you an hypothesis as to the etiology of nephritis and as to the cause of hypertension in chronic nephritis. I am quite sure that he has presented this as an hypothesis to serve as a guide to investigation rather than as a demonstrated fact. Such an hypothesis is of value, because if observation proves it to be correct we thereby have secured information as to definite facts. If observation proves it incorrect, it has helped because it has led to a study which has in the end provided us with facts, notwithstanding these facts

* See page 601.

may be contrary to the hypothesis with which we started.

Personally I do not feel that there is any necessarily close relation between high protein intake and hypertension. In the hospital, looking over the records of bood-pressure, I repeatedly see in some cases the blood-pressure fall, in others rise, when all of the patients are essentially under the same conditions of rest in bed, and diet, have, so far as we can make out, essentially the same pathological condition. These changes in blood-pressure take place without our being able to assign any definite cause. Furthermore, I have not infrequently observed the blood-pressure to fall while the non-proteid nitrogen of the blood rose. Recently we had under observation a case in which the blood-pressure was 240 millimeters of mercury with 96 milligrams of non-proteid nitrogen per 100 c.c. of blood. As the non-proteid nitrogen in the blood rose to 129 milligrams, the blood-pressure fell to 220, and when it further rose to 330 and 347 milligrams, the blood-pressure had fallen to 180. Furthermore, we not infrequently see very high blood-pressures without any evidence of the accumulation of non-proteid nitrogen in the blood.

Studying the ability of the kidney to excrete various substances, we find in some cases with high blood-pressure and with evidences of chronic nephritis that the individual is able to excrete nitrogen well and salt poorly. Other cases are able to excrete salt well and nitrogen poorly. Still other cases excrete both salt and nitrogen well, while a fourth group excrete neither salt nor nitrogen well. All of these cases have hypertension. Whatever the cause of the hypertension, it would seem that there are different types of cases on this group. It might be very helpful in getting at a proper dietary treatment for such cases to know these facts in advance and to model a diet in accordance with such observations. In the hospital quite easily such determinations can be made in relatively short time. Then a diet can be planned, but that diet must be continued for a long time before any definite conclusions can be drawn from its use. In this sense it would seem necessary that both the hospital physician and the general practitioner should share in the investigation and each would have a very definite part in the study.

DR. R. FITZ: Dr. Arnold has described striking results in the dietetic treatment of chronic nephritis. But to make any form of treatment most efficacious, a positive and accurate diagnosis of the existing lesion must be made as early as possible. Dr. Folin has pointed out that the different parts of the kidney have selective excretory functions, and Dr. Arnold has outlined tests which may be made to study various renal excretions. The basis for these tests is experimental and theoretical, and the interpretation of the results obtained has not been controlled in a sufficiently large number of cases to establish their significance from an anatomical-pathological point of view. But enough clinical evidence has accumulated to prove that their use is of real worth in the early diagnosis of kidney disease.

Every clinician is familiar with patients who consult him for indefinite cardio-vascular symptoms. Physical examination shows a slight cardiac hypertrophy. The blood-pressure may be increased. The urine is normal by ordinary tests. In this class of cases it is essential to discover the existence of a nephritis. It is in this group of cases that the more delicate tests for renal function are of greatest importance.

In such patients the phthalein test is usually normal, while the rest-nitrogen of the blood does not afford positive information of a renal lesion, since it has not accumulated. But the excretion of lactose, nitrogen, salt, water and iodide may definitely prove or exclude abnormal function on the part of the kidney, and if observed repeatedly, makes it possible to follow the progression of the disease before there are any outspoken clinical signs of its existence. Thus it must be emphasized that the finer tests for renal function are valuable in the diagnosis and prognosis of kidney disease as well as in serving as a guide to rational dietetic treatment.

DR. OTTO FOLIN: From an extended series of observations made on patients at the Long Island Hospital we believe that there is no tangible relationship between the blood-pressure and the accumulation of nitrogenous waste products in the blood in nephritis. The accumulation of such waste products can be modified, increased or diminished within very wide limits by the use of high and low nitrogen diets, but we have failed to find corresponding variations in the blood-pressure.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

MEETING OF WEDNESDAY, FEBRUARY 4, 1914, 8 P. M.

The President, DR. JAMES C. WILSON, in the chair.

DR. WILLIAM S. NEWCOMET read a paper on,

ONE HUNDRED CASES OF MALIGNANT DISEASE TREATED WITH RADIUM.

DISCUSSION.

DR. EDWARD A. SHUMWAY: The last patient shown by Dr. Newcomet has been under my observation since 1900, when I operated upon him for convergent squint. The results of the operation were excellent and he was comfortable until 1911 when he developed severe headache associated with vomiting and staggering toward the left side. In March, 1912, Dr. Frazier operated, evacuating and removing the wall of a cyst the size of a walnut found on the upper surface of the left cerebellum. The symptoms were entirely relieved but there was a recurrence of symptoms in the spring of 1913. In September Dr. Frazier did a second operation and found a solid growth in the cerebellum on the left side which proved to be a glioma. The case was considered inoperable, but upon the father demanding that something be done, the boy was referred to Dr. Newcomet. The result as seen now is gratifying. It is possible that the improved condition of the optic nerve head may be the result of the second operation, which, however, did not improve the general symptoms. Whether the improvement be temporary remains to be seen. The case, however, is well worthy of report.

DR. CHARLES H. FRAZIER: It is evident from the reports of Dr. Shumway and Dr. Newcomet that the application of radium has had a very positive influ-

ence upon the growth. We have had several cases, however, in which improvement following a simple decompressive operation in conditions precisely similar to this case, has continued over a period of at least three years. Regarding the use of radium in tumors of the brain Dr. Robert Abbe of New York and I have discussed the feasibility of using radium directly at the time of operation, not only in brain tumors generally, but possibly in lesions of the pituitary body, and we have under observation two cases in which such procedure may be employed.

DR. GEORGE E. DE SCHWEINITZ: It seems to me that there is a certain use which radium has, even if it is unable to check the progress of a growth, namely, the alleviation of pain. We may not always hope to remove the growth, but even if there is a relief of pain, the application of radium is abundantly justified. Of its value in deep-seated growths I can express no opinion, because I have not had any personal experience. Dr. Newcomet is to be congratulated on the conservative attitude which he has assumed.

DR. JAY F. SCHAMBERG: Dr. Newcomet should be congratulated upon the encouraging results shown in the patients exhibited. Likewise he should be commended for his conservatism. I feel that we ought to maintain a feeling of hopeful expectancy regarding the results of radium treatment. We are in an experimental period. The most hopeful cases Dr. Newcomet shows are those of pronounced influence upon metastatic lesions in the lypmphatic channels. It is fortunate that we have had presented this evening a paper which differs in tone from the extravagant utterances which have appeared in the public press within recent months.

DR. M. B. HARTZELL: Dr. Newcomet is to be congratulated upon his rational conservatism. The most we can say about radium is that it is a hopeful remedy, and that, when we have learned more about it, perhaps we shall discover that we have a remedy for a certain class of malignant growths.

DR. ALFRED GORDON: It would be one of the greatest acquisitions in medicine if radium could be applied to tumors of the brain. When Dr. Abbe came a short time ago before the College it occurred to me to ask him why this agent should not be tried in tumors of the brain, which are practically all hopeless cases. He seemed somewhat surprised by this question and said he would make an effort to make such application of this agent. Literature gives instances of the successful use of radium in some neurological conditions, such as obstinate cases of sciatica. It has also been employed in syringomyelia and in progressive muscular atrophy.

DR. A. B. HIRSH: In view of the expensive charges being made for the radium emanation bearing waters for internal administration, it should be remembered that the Department of Agriculture at Washington has issued a caution that these waters lose their medicinal effect within a few hours after leaving the source of supply.

DR. JOHN A. MCGLINN: I have had no experience with radium, except one case which I sent to Dr. Newcomet. It seems to me that in these cases of inoperable cancer of the cervix radium has its greatest field, if results equal those in the case shown tonight.

DR. NEWCOMET, closing: With reference to the direct application to the brain case referred to by Dr. Frazier. it seems hardly necessary to open the head to make these applications with the radium, as the "crossfire" should answer and give us as perfect result. The case presented tonight gives an example of this method and while decidedly improved, hasty conclusions must be withheld. It must be admitted that sarcomas are always most irregular in their course, and glioma is of sarcoma type. The cases of spontaneous cure have usually been sarcoma. The ideal method of using radioactivity is to employ the emanations of radium. Emanation waters must be used soon after derivation from their source. Where you have a large supply of radium the emanation should be taken off for use and the radium kept in stock.

THE CURE AT VITTEL.

DR. WILLIAM J. TAYLOR: Vittel is in northeastern France, in the Vosges, in a wide valley with an elevation of 1100 feet. The waters may be classed as mild alkaline bicarbonated, sulphated waters, non-chloride bearing, the most pronounced characteristic being the almost total absence of chloride of sodium. Their mineralization is sufficient but not excessive, and they have not the inconvenience of waters highly charged with sulphate of lime, nor the dangers of waters too strongly alkaline. The really active principles are the sulphates, carbonates and chlorides of magnesia, soda and potash, and to some extent the bicarbonates. The waters of Vittel are readily absorbed and have not the tendency to liberate free carbonic acid, and can be used with great freedom as a table water. The absence of sodium chloride renders them of the greatest value in all kidney troubles, in arterial degeneration, as well as in many diseases of the heart, and in all neurasthenias consequent upon toxemias of every sort. The Vittel treatment is primarily that by diuresis. The dosage must be carefully adapted to different individuals and diseases. Massage of some sort is essential. One form given,—massage under water,—is simply massage and movements of all the joints while a spray of hot water is playing over the whole body. I believe that the greatest efficacy of these waters is in cases of excessive uric acid and other waste products or toxemias and renal calculosis. The action in lowering blood-pressure is most marked by diminishing the viscosity of the blood. I regard this method of diuresis by drinking large quantities of the moderately mineralized sodium chloride free water as far superior to treatment by baths, sweating and the heavy drinking of actively purgative and highly mineralized waters. Contraindications to the treatment are very low blood-pressure, grave valvular cardiac disease and profound anemias. In certain juvenile epilepsies, particularly those with digestive disturbance and faulty elimination, I am told that the use of the waters is of the greatest value in diminishing the number of seizures, and in a few cases they seemed to be of lasting benefit.

DISCUSSION.

DR. WILLIAM S. NEWCOMET: Dr. Taylor mentioned the fact that possibly some of the value of these waters was due to the radioactivity that they possessed and which during transportation was lost, this accounting for the results obtained at the springs. It might be mentioned that most of these waters are radioactive, but more especially those that come from deep wells.

DR. H. B. ALLYN: I have not had the pleasure of visiting Vittel, but for some years have been using here the waters for gout, gouty conditions, neuralgias and the general neurasthenic states accompanying gout, and for gravel, and I have found them the best of any heretofore employed for these purposes.

DR. JAMES M. ANDERS: I have prescribed this water in selected cases and have found it to be an efficient diuretic. It contains no chloride of sodium, and the diet prescribed in the course of treatment is a salt free or salt poor diet, which two facts, in a large measure, explain the efficacy of the water, both as a diuretic and eliminator of poisonous wastes. Certain elements of the life at Vittel, —restricted diet, walks, freedom from care and responsibility must be given weight These waters are not in the slightest degree laxative, nor to any extent diaphoretic. Treatment, therefore, is based largely upon the diuretic action of the water. The results, it seems to me, corroborate in a striking manner the generally accepted opinion that the kidneys are the principal eliminating channels of the body.

DR. TAYLOR, closing: I have nothing to add, except that Vittel is now becoming very popular, but is patronized almost entirely by French speaking people. During my stay I did not see half a dozen Americans or fifty English people.

DR. ALFRED GORDON read a paper on,

CEREBROSPINAL FLUID AND A SPECIAL METHOD OF TREATMENT OF ESSENTIAL EPILEPSY.

The value of lumbar puncture and the importance of study of cerebro-spinal fluid for diagnostic and therapeutic purposes are described and mention made of toxic products usually present in the blood and in the cerebro-spinal fluid in epilepsies. Attention is called to the work of Geni and Donath with reference to the toxicity of blood serum in epileptic individuals. It is then estimated that if the cerebro-spinal fluid of one epileptic patient could be injected in another epileptic patient, thus bringing into the economy two opposing toxins, gratifying results might be secured. Four patients were subjected to the treatment in a period of ten months. There has been decided diminution in number of attacks and in severity, with general improvement in mentality and all functions. The treatment is shown to be far superior to any other. Rules are outlined for future investigation in this field of work.

DR. MORRIS J. LEWIS: Dr. Gordon does not mention whether in any of the cases the Wassermann reaction was present or not. In a rather large experience I have found this reaction present in quite a large proportion of cases, especially in cases developing after puberty. I would hesitate about using spinal fluid in the manner mentioned, and especially, without knowing most definitely that there was no communicable disease present.

DR. GORDON, closing: Unquestionable hesitation should be felt in any new treatment. I did not introduce the fluid into the spinal cord, but subcutaneously. I simply take this opportunity to present to the profession the favorable results so far obtained, which, so far as I know, have not been gained by any other method. The Wassermann test was made and found negative.

Book Reviews.

A Text-Book of Histology. By FREDERICK R. BAILEY, A.M., M.D., Fourth revised edition. pp. xviii+644. Figs. 384. New York: William Wood and Company. 1913.

In the new edition of Bailey's Histology "the text has been thoroughly revised and some parts of it rewritten"; fifty-five pages and thirty figures have been added, but it has seemed unwise to alter the general plan of so successful a text-book. This plan consists in presenting a clear and simple account of the well-known facts of histology. Indeed, reference is frequently made to the sharply contended issues of the day, but the author usually writes of them with the fairness and unconcern of a noncombatant and consigns them to small type. The development of the various tissues and organs is also lightly treated, usually in the form of postscripts to the accounts of the corresponding structures in the adult. What to do with the nervous system has long been a puzzling question for the writers of histological text-books. Stöhr, for example, deals with it very briefly and refers his readers to special treatises. Bailey's Histology, however, includes a special treatise of 132 pages, written and revised by Dr. O. S. Strong, in which the nuclei and fiber-tracts are concisely described. This thorough treatment of the central nervous system is perhaps the most notable feature of the book.

Among the illustrations one sees many old familiar figures, since two-thirds of them have been gathered from other sources, including many from the standard text-books. As stated in the preface,—"The uselessness of redrawing perfectly satisfactory illustrations has led the writer to borrow freely." His indebtedness is correspondingly great, but the ignominy of appearing like Aesop's daw in peacock plumes has been avoided by frankly acknowledging the source of every figure. Both figures and text have been well printed, and the volume is attractive, though somewhat heavy.

Medical Jurisprudence from the Judicial Standpoint. By W. RAMSAY SMITH, M.D., C.M., D.Sc., F.R.S. (Edin.). London: Stevens and Sons, Limited. 1913.

The monograph aims to view "the principles and practise of medical jurisprudence from the point of view of the court, the bench, and the judge." Such an exposition by a physician argues unusual and intimate familiarity with the law, and this indeed the author appears to possess. The English common law is the basis of the work; but its colonial and American

modifications, together with the civil law, are also considered. The subject is illustrated with representative cases from actual experience. The volume should be of value to any physician who is in any way to be involved in legal procedure.

Anatomy and Physiology. A Text-Book for Nurses. By JOHN FORSYTH LITTLE, M.D. Philadelphia and New York: Lea and Febiger 1914.

This excellent first-year text-book for nurses is a useful contribution to the teacher's working material. It is well arranged, and is illustrated with 147 engravings and 4 plates, many of them taken from Gray's Anatomy. There is a list of appropriate questions at the end of each chapter; and at the end of the book are tables of weights and measures and a useful glossary. The volume is published in the Nurses' Textbook Series.

Manual of Surgery. By ALEXIS THOMSON, Professor of Surgery, University of Edinburgh; and Alexander Miles, surgeon Edinburgh Royal Infirmary. Volume Third. Second edition. With 255 illustrations. Edinburgh, Glasgow, and London: Henry Frowde and Hodder and Stoughton. 1913.

This third volume, on operative surgery, was first added to the fourth edition of this standard Scottish work, and was reviewed in the issue of the JOURNAL for Nov. 21, 1912 (Vol. clxvii, p. 738). In this second edition of the new volume, the Basle anatomic nomenclature has been adopted, the older terminology being also retained in brackets and the equivalents included in the index. The number of illustrations has been increased from 220 to 255, and the total of pages from 565 to 620. A chapter has been added on arterial suture. The volume securely maintains the immediate position of acceptance which it found on first publication.

Tropical Medicine and Hygiene. By C. W. DANIELS, M.B. Cantab., F.R.C.P., Lond. In three parts, with colored and other illustrations. Part I. Diseases Due to Protozoa. Second edition. New York: William Wood and Company. 1913.

The first edition of this volume, by Daniels and Wilkinson, was reviewed in the issue of the JOURNAL for June 2, 1910 (Vol. clxii, p. 755). In this second edition, from which the name of the junior author has disappeared, an alteration has been made in the arrangement of the material whereby the amount of repetition is diminished. The subjects of prophylaxis, treatment, and nursing are more extensively considered in connection with each disease. The terminal appendices have been reduced from five to three by the withdrawal of the classification of the *diptera,* but the total number of pages is increased from 264 to 277. The two colored plates have been improved and transferred from the end of the book to the front; and the number of figures in the text has been increased from 62 to 73, and an introductory list of illustrations added. The book should easily maintain its position of value in the literature of tropic diseases.

Principles of Surgery. By W. A. BRYAN, A.M., M.D., professor of surgery and clinical surgery at Vanderbilt University, Nashville, Tennessee. Original illustrations. Philadelphia and London: W. B. Saunders Company. 1913.

A book of seven hundred pages, well printed, and adequately illustrated with pictures and microphotographs, limiting itself entirely to "Principles of Surgery"; eliminating, therefore, operative technic and condensing treatment into brief paragraphs, sometimes sentences, which are to be found at the end of individual chapters. It is thus possible for a man of Dr. Bryan's experience and knowledge to condense a large amount of information within a small compass. It is the new example of the reaction against enormous systems of surgery which have been recently so common.

The reviewer desires to recommend this book enthusiastically. It is one of the most successful examples of condensation which we have seen in years. It is comprehensive, and yet eliminates everything that is not essential. Its brief passages on treatment are admirable in tone and in accordance with the most advanced views. For instance, anthrax. It has been shown that the means formerly employed, of excision or cauterization, rendered the dislodgment of the bacteria from the malignant pustule much more probable than if no such interference had been made. Even so insignificant trauma as may be done by hypodermic injections or attempting to lift the eschar, are interdicted. In other words, eliminating operative treatment.

The chapters on tumors and cysts constitute about one-third of the book and again attract the reader by a combination of brevity and thoroughness. The writer's purpose has been to put the fundamental facts before the student and the physician in a simple and logical way, and thereby to lay a foundation upon which an intelligent understanding of the immense details of practical work may be built.

The book may be studied with benefit by every man who has had two years of medical training.

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GENERAL PARESIS AND THE DIFFICULTIES IN ITS TREATMENT.

THE recent advances which have been made in our knowledge of syphilis have surely come to us in quick succession. Our progress in the knowledge of malaria and trypanosomiasis should be a source of great optimism for us. Our advances in the acute contagious and infectious diseases have been noteworthy, but in few diseases have we had such rapid progress as in syphilis, and particularly in syphilis of the nervous system. First we have Schaudinn, not a physician, but a zoologist, discovering the spirocheta pallida, latterly and more properly called the treponema pallida, which is now generally acknowledged to be the causative organism of syphilis. It was not long before this was followed by the Wassermann reaction and its modifications with the blood serum, as a laboratory test for past or present, latent or active syphilis. Then we have the application of chemical, serological, and cytological methods to the spinal fluid for the diagnosis, prognosis and treatment in acute and chronic infectious conditions of the central nervous system. The investigation of the cerebrospinal fluid now consists of the Wassermann reaction, the tests,—Noguchi, Nonne-Appelt and others,—for increased globulin, and the quantitative and qualitative cell count, especially pleocytosis and lymphocytosis. Recently the Lange gold solution test has been added to our laboratory armamentarium.

In pathology, too, we have been making great headway. This applies particularly to the pathology of general paresis and locomotor ataxia, the so-called para- or metasyphilitic diseases. Ordinarily cerebrospinal syphilis presents a pathological lesion which is confined mainly to the blood-vessels and meninges, with the well-known endarteritis of Heubner, with gummatous exudation and lymphocytic infiltration, whereas, in the so-called parasyphilitic diseases, namely, general paresis and locomotor ataxia, we find the changes in the neurones or nerve cells. The first-named condition, cerebrospinal syphilis, is, accordingly, essentially a lesion of the interstitial connective tissue. The second group, paresis and tabes, are, on the other hand, essentially lesions of the parenchymatous tissues of the nervous system. It was thought, for this reason, that the two contrasting conditions could not be due to exactly the same cause acting in precisely the same way, but that, although tabes and paresis showed a decided relationship to syphilis, they were not caused directly by the spirocheta pallida, but were due, in some unknown way, to toxins acting upon the nerve cells after the spirochetes had spent their force, after the fashion, we may say, of neuritis or paralysis following in the wake of diphtheria.

Noguchi and Moore[1] have, however, recently found the spirochete in the brains of twelve out of seventy patients who had had frank general paresis, as proved by the clinical, laboratory and pathological findings. Later Noguchi[2] reported the finding of the spirochete in forty-eight brains among two hundred of general paresis, and in one spinal cord out of twelve of locomotor ataxia. Noguchi also infected rabbits directly with the tissue from general paretics and produced a perfectly typical luetic lesion in the testicle of the rabbits so infected, and was able to recover the spirochetes from these lesions.[3] The finding of the spirochete in the brain of paretics has since been confirmed by others, notably Marinesco. Forster and Thomaszewski[4] resorted to the method of brain puncture in the living general paretic, aspirated cortical substance from the brain and demonstrated the presence of living spirochetae pallidae in the cortical tissue from the brains of these living paretics. From the experimental

[1] *Journal of Experimental Medicine*, Feb., 1913, p. 232.
[2] *Journal of Cutaneous Medicine*, Aug., 1913, p. 543.
[3] *Journal of American Medical Association*, July 2, 1913, p. 85.
[4] *Deutsche Med. Wochenschrift*, 1913, Vol. xxxix, No. 26.

investigations and findings of such scientific and reliable workers in the field of experimental medicine we may conclude, at least in the case of general paresis, that syphilis is the direct causative factor in the production of this strange disease.

The findings in paresis show that the organism is imbedded deep within the tissues, far away from the blood vessels, and practically in direct contact with the nerve cells themselves. There is, further, an accumulation or infiltration of lymphocytes about the blood vessels, especially in the perivascular lymphatic channels. The reason why the spirochete has not been found in the past seems to be because the examination was directed mainly to the regions of the blood vessels, and the examinations were not as conscientious, prolonged and intensive as they should be. Moreover, in paresis the spirochetes are difficult to see, even with the modern staining methods.

The reason for the resistance of paresis to treatment by ordinary anti-syphilitic methods is not easy to explain, but recent study discloses the following facts: The spirochetes are so deep in the tissues that they are not easy to get at through the blood stream, which difficulty is further enhanced by the infiltration of the adventitial spaces, the so-called perivascular lymphatic spaces, with leucocytic invasion, and hence an interference with diffusion of spirocheticidal poison (mercury, arsenic, salvarsan). It is particularly for this reason that the results produced by mercury and salvarsan, intramuscularly or intravenously, have not been encouraging in paresis. It is also supposed that in paresis we may have a different kind of organism, having from the very beginning a different affinity for nervous tissue or a greater resistance, or the same species of organism may have, as we find in ordinary cerebrospinal syphilis, for some reason or other invaded the deeper structures with its destructive effects upon the parenchymatous nervous tissues and become unduly resistant.

The problem which here presented itself was how to reach the spirochetes buried deep within the brain substance and apparently but little accessible by way of the blood stream. Certain observations having shown that salvarsan, after being administered intravenously, cannot be recovered in the cerebrospinal fluid withdrawn by means of lumbar puncture, we were justified in concluding that the possible spirochetes in the cerebrospinal fluid were not reached by the salvarsan. It was logical, therefore, to expect that when this drug, in some way or other, is injected directly into the subdural space, more direct contact with the spirochetes might be obtained. It was found, however, that the drug salvarsan, when diluted with salt solution and injected into the spinal canal (subdural space), was injurious and capable of doing serious injury to the nerve structures. It may be noted here that recently (March, 1914) it was reported that there had been seven deaths from neosalvarsan in Los Angeles, California. Investigation disclosed the fact that the drug neosalvarsan had been mixed with salt solution and given intraspinously. Swift and Ellis, however, overcome these difficulties by using the serum taken from other syphilitic patients or from the same patient, the latter having received one hour previously an intravenous injection of salvarsan or neosalvarsan.[5] Thus hetero- or autosalvarsanized or neosalvarsanized serum was being employed, this being further diluted with normal saline solution. Lately certain modifications, such as the intraspinous injection of undiluted auto-salvarsanized serum, have been tried by various workers in the field of intraspinal therapy.

For the technic and results of this method of treatment the reader is referred to the original articles by Swift and Ellis and others.[6]

The lesson to be learned from a consideration of the facts here enumerated is this: We should do our utmost to attempt to make an early diagnosis in general paresis, by both clinical and laboratory examination. As soon as the diagnosis is made treatment should be instituted. This should be vigorous anti-syphilitic treatment, mercury and potassium iodide, and salvarsan or neosalvarsan, intravenously and intraspinously, being employed. The case should be watched and checked up by repeated examinations clinically and in the laboratory. The Wassermann reaction in the cerebrospinal fluid and the cell count are especially important guides as to prognosis and the results of our therapeutic efforts. Under these conditions it is at least possible that the results may be more favorable than hitherto reported.

[5] *New York Medical Journal*, July, 1913; *Archives of Internal Medicine*, Sept. 15, 1913; *Journal of Experimental Medicine*, Oct., 1913, p. 428 and 435.

[6] See also Ayer, BOSTON MED. AND SURG. JOUR., March 26, 1914, p. 452.

MEDICAL LEGISLATION. SUPPRESSION OF ILLEGAL TRAFFIC IN HABIT-FORMING DRUGS.

There are at present pending, before both the national congress and the legislature of this Commonwealth, bills aiming to suppress the illegal sale of habit-forming drugs. The extent to which such drugs, notably morphia and cocaine, are consumed by habitués constitutes a serious menace to the health as well as the morals of the community, and any legislative attempt to control their sale is therefore important and deserving of medical attention.

Of the two measures of this type now under consideration by the Massachusetts General Court, one prohibits druggists from filling any prescription containing a habit-forming drug, the other makes it a criminal offence to dispense such drugs for other than legitimate medicinal use. The first is aimed at those habitués who, having somehow obtained a physician's prescription for morphia or cocaine, continue to employ it indefinitely as a permanent means of securing the drug. The second is aimed at a limited, but unfortunately existent, class of irregular, self-styled, misguided practitioners, who are willing to issue such prescriptions to enable habitués to obtain drugs illegitimately. It seems that these are both desirable measures and should be enacted into law.

The measure on this subject now pending before the national congress is the so-called "Harrison Anti-Narcotic Bill." The provisions of this bill may essentially be summarized as follows:—

Sect 1. It shall be unlawful for any person to produce, import, manufacture, compound, deal in, dispense, sell, distribute, or give away any of the aforesaid drugs or articles (preparations of opium or coca, and hypodermic syringes) without having registered and paid the special tax provided for in this section.

Sect. 2. It shall be unlawful for any person to sell, barter, exchange, or give away any of the aforesaid drugs or articles except in pursuance of a written order of the purchaser or person to whom such article is given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue.

Sect. 3. Any person who shall be registered in any internal-revenue district under the provisions of section one of this act shall, whenever required so to do by the collector of the district, render to the said collector a true and correct statement or return, verified by affidavit, setting forth the quantity of the aforesaid drugs and articles received by him in said internal-revenue district during such period immediately preceding the demand of the collector, not exceeding three months, as the said collector may fix and determine; the names of the persons from whom the said articles were received; the quantity in each instance received from each of such persons, and the date when received.

Sect. 4. It shall be unlawful for any person who shall not have registered and paid the special tax as required by section one of this act to send, ship, carry, or deliver any of the aforesaid drugs or articles from any State or Territory, the Territory of Alaska, the District of Columbia, or any insular possession.

Sect. 5. (Provides for the filing of forms and prescriptions.)

Sect. 6. The provisions of this act shall not be construed to apply to the sale, distribution, giving away, or dispensing of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine, or more than one-twelfth of a grain of heroin, or more than one grain of codeine, or any salt or derivative of any of them in one fluid ounce, or, if a solid or semi-solid preparation, in one avoirdupois ounce; or to liniments, ointments or other preparations which are prepared for external use only, except liniments, ointments and other preparations, which contain cocaine or any of its salts or alpha or beta eucaine or any of their salts or any synthetic substitute for them: Provided, That such remedies and preparations are sold, distributed, given away or dispensed as medicines and not for the purpose of evading the intentions and provisions of this act: Provided, That the amount of any drug herein mentioned shall be shown upon the label of the container of such remedy or preparation. The provisions of this act shall not apply to decocainized coca leaves or preparations made therefrom, or to other preparations of coca leaves which do not contain cocaine.

Sect. 7. All laws relating to the assessment, collection, remission and refund of internal-revenue taxes, including section 3229 of the Revised Statutes of the United States, so far as applicable to and not inconsistent with the provisions of this act, are hereby extended and made applicable to the special taxes imposed by this act.

Sect. 8. It shall be unlawful for any person not registered under the provisions of this act, and who has not paid the special tax provided for by this act, to have in his possession or under his control any of the aforesaid drugs or articles; and such possession or control shall be presumptive evidence of a violation of this section, and also a violation of the provisions of section one of this act.

Sect. 9. Any person who violates or fails to comply with any of the requirements of this act shall, on conviction, be fined not more than

$2,000, or be imprisoned not more than five years, or both, in the discretion of the court.

Sect. 10. The commissioner of internal revenue, with the approval of the secretary of the treasury, is authorized to appoint such agents, deputy collectors, inspectors, chemists, assistant chemists, clerks and messengers in the field and in the Bureau of Internal Revenue in the District of Columbia as may be necessary to enforce the provisions of this act.

Sect. 11. The sum of $150,000, or so much thereof as may be necessary, shall be, and hereby is, appropriated, out of any moneys in the treasury not otherwise appropriated, for the purpose of carrying into effect the provisions of this act.

Sect. 12. Nothing contained in this act shall be construed to impair, alter, amend or repeal any of the provisions of the act of congress approved June 30, 1906, entitled "An act for preventing the manufacture, sale, or transportation of adulterated or misbranded, or poisonous or deleterious foods, drugs, medicines, and liquors and for regulating traffic therein and for other purposes" and any amendment thereof, or of the act approved February 9, 1909, entitled "An act to prohibit the importation and use of opium for other than medicinal purposes," and any amendment thereof.

The purpose of this bill is assuredly good, and in the main its provisions seem excellent. There are certain aspects, however, in which it appears questionable whether they will accomplish the end desired. In the first place Section 6 has been principally criticised, and from two opposite points of view. On the one hand, it is pointed out that this section exempts precisely the class of preparations which it is most desirable to suppress, namely, those containing small amounts of narcotic drugs from which, however, addiction may easily be acquired or maintained. On the other hand, this section is criticised because it allows only so proportionately small a dose of heroin in comparison with that of morphine.

In the second place, the Harrison bill is criticised because it does not allow a physician to supply himself with morphia or cocaine for his own dispensation in his office or on visits, without registering with the Internal Revenue Department. Such registration, it is contended, would be an inconvenience and hardship, and it is urged that manufacturers should be given more leeway in supplying registered physicians.

The first of these three objections seems by far the most important. If it be true that drug-habits are to any extent fostered by preparations of the exempted class, then these exemptions should certainly be restricted or entirely removed. The bill as a whole, however, would doubtless be beneficial, and if amended in the light of expert criticism should prove a valuable measure of national legislation towards restriction of the illegal traffic in habit-forming drugs.

VINDICATION OF ANTITYPHOID INOCULATION.

Much interest has been felt in the case of Clarence Panzer, a young man of Woodhaven, Borough of Queens, who died on April 1 after an illness of two weeks, the cause of death assigned by the attending physician being typhoid fever. As Mr. Panzer, who was a member of the 13th Regiment, New York National Guard, had, in company with other members of the regiment, been inoculated against typhoid (though a considerable time before his illness), the Health Department, although threatened with a suit for damages, very properly refused to issue a burial permit until an autopsy had been made. The case was accordingly placed in the coroner's hands, and an autopsy, made on April 2, showed conclusively that the disease to which the patient had succumbed was not typhoid fever, but malignant ulcerative endocarditis. It had also been previously known that the patient was the subject of organic heart disease. In this connection it seems appropriate to quote the following editorial from the Boston *Herald*, as a gratifying example of sound medical opinion in the lay press:

"The infallibility of typhoid vaccination as a preventive has received confirmation from an unusual New York case. A member of the coast artillery recently died of an illness diagnosed as typhoid. As he had previously been inoculated, his death attracted much attention. The anti-vaccinationists, who extend their opposition to all serums, made much of the case. They cited it in contravention of last year's army records that show but two typhoid cases, in both of which inoculation had been doubtful.

"A post-mortem examination, obtained with difficulty, showed that the New York private was not a victim of typhoid. The autopsy revealed an unusual vegetation in the heart which had caused the symptoms closely akin to those of typhoid. The error was purely one of diagnosis by the attending physician. The value of anti-typhoid vaccination remains unshaken. The incident illustrates, moreover, the duty of relatives to allow an autopsy when the interests of science demand it."

MEDICAL NOTES.

THE SOLLY TUBERCULOSIS SOCIETY.—On January 24, 1914, the physicians of Colorado Springs, particularly those interested in the care and treatment of tuberculosis, met at luncheon and formed a society for the advancement in scientific treatment and prevention of tuberculosis. The organization was named "The Solly Tuberculosis Society" in honor of the late Dr. S. Edwin Solly, of this city.

At the regular monthly meetings of the society some particular phase in the treatment of tuberculosis was presented in the form of a symposium covering all the latest writings in various modern languages.

The first regular meeting of the society was held Feb. 17, 1914. At this meeting the question of the influence of altitude and climate in the cure of tuberculosis was presented for discussion.

LONDON DEATH-RATES IN FEBRUARY.—Statistics recently published show that the total death-rate of London in February was only 14.8 per 1000 inhabitants living. Among the several districts and boroughs, the highest rate was 20.3 in Holburn, a central slum, and the lowest was 10.4 in Hampstead, an open suburb on the north.

AWARD OF FOTHERGILL MEDAL.—It is announced that the Fothergill gold medal of the London Medical Society for 1914 has been awarded to Dr. John George Adami, F.R.S., LL.D., Strathcona professor of pathology and bacteriology at McGill University, for his work on pathology and its practical application to medicine and surgery.

A MUNIFICENT BEQUEST.—It is announced from Philadelphia on April 8 that under the will of the late Dr. Louis A. Dühring, for many years professor of dermatology at the University of Pennsylvania, the university will receive approximately $1,000,000. This munificent bequest is to be divided between the general library, the university hospital, the departments of dermatology, archeology and paleontology, and the College of Physicians of Philadelphia.

TRANSMISSION OF BUBONIC PLAGUE.—Report from New Orleans, La., on April 6, states, on the authority of Dr. John Guiteras, director of sanitation for the republic of Cuba, that the recent cases of bubonic plague in Havana are believed to have been transmitted not by rats but by fleas conveyed in sacks of sugar.

A CENTENARIAN.—Edward Jones, who died on April 7 at Niles, near Youngstown, Ohio, is said to have been born in 1807. He was a Welshman and a sailor, but retired from the sea some years ago.

A VOTING CENTENARIAN.—Miss Margaret Swinbank, of Sycamore, Ill., who is said to have been born in 1813, cast her first municipal ballot at the general election on April 7. She is believed to be the senior woman voter in the United States.

ILLNESS OF THE KING OF SWEDEN.—Report from Stockholm states that King Gustave of Sweden was operated on April 9 for gastric ulcer. Gastro-enterostomy was done, and the royal patient is reported as progressing favorably.

GERMAN CONGRESS FOR INTERNAL MEDICINE.—The thirty-first German Congress for Internal Medicine will be held next week at Wiesbaden, from April 20 to 23, inclusive, under the presidency of Dr. Von Romberg, of München.

"The principal papers to be presented are: On Monday, April 20, "Nature and Treatment of Sleeplessness," the reporters of which subject are Herren Gaupp (Tübingen), Goldschneider (Berlin) and Faust (Würzburg). On the third day, Wednesday, April 22, at 10 a.m., by the desire of the president, Herr Werner (Heidelberg) will present a comprehensive address upon the radiation treatment of new growths of the internal organs, and on the fourth day, Thursday, April 23, at 11 a.m., Herr Schottmüller (Hamburg) will deliver an address on "The Treatment of Sepsis."

BUBONIC PLAGUE AND YELLOW FEVER IN ECUADOR.—Report from Panama on April 4 states that 21 deaths of yellow fever have recently occurred at Esmeraldas, Ecuador, among the federal troops who are holding that city; and that several cases of yellow fever and bubonic plague have been notified recently at Guayaquil.

A SCHOOL CLINIC AT SOUTHAMPTON.—In a recent address, Dr. R. E. Lauder, medical health officer of Southampton, England, describes the methods of school inspection there employed. In 1912, medical treatment by private physicians

was recommended for 1133 children. In only 328 cases was the advice followed. In 1913, therefore, the city established a municipal clinic and dispensary, in which common diseases of the teeth, eyes, nose, throat, ears, and skin are treated. A full-time dentist is there employed, at a salary of £300 a year. Visiting nurses investigate home conditions and follow up the pupils with instructions.

NEW JERSEY STATE HOSPITAL.—The recently published thirty-eighth annual report of the managers and officers of the New Jersey State Hospital, at Morris Plains, records the work of that institution for the year ended Oct. 31, 1913. During this period 2847 patients were under treatment, of whom 195 died and 84 were discharged as recovered. The institution is seriously overcrowded, and among its urgent needs are new and additional buildings and an incinerating and water purification plant.

BOSTON AND NEW ENGLAND.

SCARLET FEVER IN BOSTON.—Scarlet fever continues epidemic in Boston. Since last December there have been 20 deaths of the disease, and 555 cases are now under treatment.

SCARLET FEVER IN COHASSET.—Scarlet fever continues epidemic in Cohasset, Mass. Three new cases were reported last week. All the schools, churches, and the town hall and library have been closed.

GLANDERS IN BEVERLY.—Glanders is at present epizoötic among working horses in Beverly, Mass. Ten deaths from the disease have already occurred, and the local public drinking fountains have been ordered closed.

SMALLPOX ON A SPANISH STEAMER.—A case of smallpox was discovered recently in this port aboard the Spanish steamer *Inez*, recently arrived from Barcelona. The vessel was fumigated, the crew vaccinated, and the patient transferred to the quarantine hospital.

SCARLET FEVER IN BRIDGEWATER.—Scarlet fever is at present epidemic in Bridgewater, Mass., where 42 cases of the disease have already been reported. All schools have been ordered closed.

SMALLPOX IN BROCKTON.—Smallpox is at present mildly epidemic in Brockton, Mass. Three new cases of the disease were reported on April 1.

TWO LIVING BROCKTON CENTENARIANS.—Abraham Weiner, of Brockton, Mass., who is said to have been born in Odessa, Russia, on April 1, 1809, celebrated recently his supposed one hundred and fifth anniversary. He served for 25 years in the Russian Army before migrating in 1864 to the United States. He has five children.

Morris D. Shimelovitch, of Brockton, Mass., is said to have been born on Feb. 8, 1811. He is in excellent health and walks out daily.

INVESTIGATION OF DRUNKENNESS IN MASSACHUSETTS.—The recently published report of the commission, appointed in August, 1913, to investigate drunkenness in Massachusetts, records the work and recommendations of that body. A series of public hearings was held and numerous measures considered. The first part of the report is concerned with ascertaining and stating the nature and magnitude of the problem, the second with discussion of suggestions for the prevention of drunkenness. The commission makes ten specific recommendations for legislation, embodied in six proposed bills which are printed in an appendix. It believes that the method of committing persons to penal institutions for drunkenness is wrong in principle and should be abandoned.

HUNTINGTON HOSPITAL FOR CANCER RESEARCH.—The recently published first annual report of the Collis P. Huntington Memorial Hospital for Cancer Research records the work of that institution for the fiscal year ended June 30, 1913. During this period 75 in-patients and 115 out-patients were treated. The number of deaths is not stated. Various lines of research were pursued and two papers on the results have been published.

ABOLITION OF VITAL STATISTICS DIVISION.—The mayor of Boston has recently abolished the division of vital statistics in the health department of this city, thereby retiring Dr. William H. Davis, the statistician who held post as its chief.

COÖPERATIVE SUBURBAN BOARD OF HEALTH.—The Coöperative Suburban Board of Health,

which was organized on April 1, 1913, has just completed successfully the first year of its activities. It was designed to carry on the health work, either in whole or in part, of the towns of Wellesley, Belmont, Framingham, Weston, Needham, Melrose, Winchester, and Canton, Mass. By this combination, which was originally suggested by Prof. Earle B. Phelps of the Massachusetts Institute of Technology, each of the townships has secured far more extensive and efficient health supervision than would have been possible for it to maintain alone, and at an aggregate cost considerably less than that previously spent for this purpose. This first year has abundantly justified the theory of this plan of health work, which might to advantage be imitated in other rural and suburban town groups throughout the country.

Hospital Bequests.—The will of the late Eliza Callahan Cleveland, of Jamaica Plain, Mass., which was filed in probate on April 3, contains a bequest of $3000 to St. Luke's Hospital for Women, Shanghai, China.

The will of the late Elizabeth S. Hall, which was probated on April 7 at Exeter, N. H., contains a bequest of $10,000 to the building fund of the Exeter Cottage Hospital.

The will of the late Henry C. Whitcomb, which was recently filed at the Suffolk probate court, contains a bequest of $20,000 to the Home for Aged Couples, Boston.

The will of the late Frank Wood, of Ashmont, Mass., which was filed recently at the Suffolk registry of probate, creates a trust for the establishment in Dorchester, Mass., of a home for convalescents and incurables. For this purpose the testator gives 40 acres of land and $50,000.

Cases of Infectious Diseases reported to the Boston Board of Health for the week ending April 7, 1914: Diphtheria, 54; scarlatina, 147, of which 13 were non-residents; typhoid fever, 7, of which 1 was non-resident; measles, 86; tuberculosis, 38, of which 1 was non-resident.

The death-rate of the reported deaths for the week was 17.15.

NEW YORK NOTES.

Opening of Dispensary, Syracuse Medical College.—The Syracuse University Medical College celebrated the opening of the new Dispensary March 30, 1914. During the afternoon the building was open for inspection. The building has specially designed rooms to accommodate the following clinics: On the first floor, obstetrics and gynecology, pediatrics, genito-urinary diseases, orthopedics, and tuberculosis, with the pharmacy and offices for clerks, medical superintendent and staff. On the second floor, general surgery, proctology, nose, throat and ear, dermatology and syphilis, internal medicine, psychiatry and neurology, and ophthalmology. In the basement are the x-ray room, an orthopedic shop, a milk-distributing station and the manufacturing pharmacy. The third floor is occupied by the laboratories for chemical and microscopical diagnosis, bacteriology, and research work. A small laboratory for instant use is provided with each large clinic. The furniture and equipment is of the latest model. In the evening a public meeting was held at which Chancellor Day formally presented the use of the building and equipment to the Syracuse Free Dispensary Association, which will continue the conduct of the Dispensary as a charity, while vesting in the faculty of the College of Medicine the organization and administration of the medical and surgical service. The address of the evening was made by Dr. Richard C. Cabot of the Harvard Medical School, who with his characteristic forcefulness impressed upon the audience the importance of dispensary work and of the great advances in medical practice which would be gained by team work.

Reorganization of Presbyterian Hospital.—At a meeting of the trustees of Columbia University, held on April 6, it was announced that the Presbyterian Hospital, which is in alliance with the medical department of the university, had so reorganized its administrative work as to provide for single responsibility for both medical and surgical services. In accordance with this plan, Dr. Theodore Janeway, Bard professor of the practice of medicine in the College of Physicians and Surgeons, has been appointed medical director of the hospital, and Dr. George E. Brewer, surgical director. The pathological department of the hospital will be under the direction of Dr. William G. MacCallum, professor of pathology. At this meeting it was also announced that a gift of $2,000, for surgical research, had been received from an anonymous donor.

Death-Rate for Week Ending April 4, 1914.—There were 1612 deaths and a death-rate of

15.06 per 100 of the population reported the past week as against 1512 deaths and a rate of 14.68 for the corresponding week of 1913, an increase in the absolute number of deaths of 100 and in the rate of .36 of a point, equivalent to a relative increase of 39 deaths. The following causes showed a decreased mortality: Measles, scarlet fever, cerebro-spinal meningitis, diarrheal diseases under five years of age, influenza, bronchitis, broncho-pneumonia, pulmonary tuberculosis, Bright's disease and nephritis; the mortality from whooping cough and typhoid fever was the same as that of last year. The following causes showed an increased mortality: Diphtheria and croup, digestive diseases other than diarrhea, organic heart disease, lobar pneumonia, diseases of nervous system, violence and all other causes. The mortality of infants under one year of age showed an increase of 27 deaths, between one and five years a decrease of 38 deaths, between five and sixty-five years of age an increase of 43 deaths, and at sixty-five years and over an increase of 68 deaths.

The death-rate for the first fourteen weeks of 1914 was 15.57 per 1000 of the population as against 15.77 for the corresponding period of 1913, a decrease of .20 of a point.

APPOINTMENT OF DR. WILBUR.—It was announced at Albany on April 6 that Dr. Cressy L. Wilbur, of Washington, D. C., chief statistician of the United States census bureau, has been appointed head of the new division of vital statistics in the New York state department of health, at a salary of $4000 a year.

MEDICAL JUDGES AND INSANE CRIMINALS.—A bill has recently been brought before the state senate at Albany, providing that in each county there shall be a medical judge who shall attend any trial at which medical evidence is taken concerning the sanity of a party to an action, and shall give medical advice to court and jury, his instructions to have the same weight as those of a trial judge. It is also proposed that the clause in the penal code enabling a verdict of "not guilty by reason of insanity" be changed to "guilty but insane." This would prevent the acquittal of dangerous criminal lunatics, and would also prevent insane criminals from securing writs of *habeas corpus*. It is reported, however, that the Governor will veto this bill on the ground that it would virtually abolish capital punishment. The measures are recommended by the State Bar Association.

ANTI-PNEUMOCOCCUS SERUM.—A press report on March 25 states that the Rockefeller Institute for Medical Research has announced the preparation by Dr. Rufus Cole of an anti-pneumococcus serum for the treatment of pneumonia. The serum is prepared like that of diphtheria, from the horse.

RECOMMENDATIONS FOR BELLEVUE HOSPITAL.—The hospital investigating committee of the Board of Estimate and Apportionment has made a report in which are described the deplorable conditions which have existed at the old "dead house" at Bellevue Hospital, N. Y., on account of the lack of room, and recommends the appropriation of $12,000 for the maintenance of a new one. It is also recommended that the state law concerning autopsies be amended so as to enable hospitals to make a much larger percentage of autopsies than is now possible. The reports goes on to say: "Bellevue Hospital has built and equipped the finest pathological building in the United States, and probably the best in existence. It is provided with every modern facility for performing autopsies and following up such autopsies by experimental work upon tissues; but, although the hospital has provided itself with this exceptionally well-designed and thoroughly equipped building, it is practically unable to use it, because of the inability to secure permission to perform autopsies. So long as it is impossible to perform a larger percentage of autopsies medical knowledge in the United States will lag behind that of Europe, and advancement will naturally be slow. . . The conclusions to be drawn from the large percentage of errors in clinical diagnoses revealed in the records of Bellevue are not that the findings of the attending physicians are carelessly made and recorded, but rather that too great reliance is placed upon inexperienced house physicians and internes, and also that the current knowledge necessary to make clinical diagnoses which shall approach accuracy is insufficient.

Current Literature

MEDICAL RECORD.

MARCH 28, 1914.

1. CLARK, L. P. *Remarks upon Mental Infantilism in the Tic Neurosis.*
2. WOLDERT, A. *Determination of the Blood-Pressure as an Aid to Diagnosis and Prognosis in Certain Diseases.*
3. DICKINSON, G. K. *The Trail of the Serpent.*

4. LEWISON, C. G. *Nerve Injuries.*
5. *CLARK, J. B. *A Case of Syphilis Cured Apparently by Accident.*
6. PETERSON, E. A. *Streptococcic Infection of the Cervix Uteri.*

5. Clark reports a case of fresh syphilis in which, owing to a misunderstanding, mercurial ointment was rubbed into the skin of the entire body regularly for four days. There were no symptoms of mercurial poisoning, and the luetic symptoms disappeared in an incredibly short time. [L. D. C.]

NEW YORK MEDICAL JOURNAL.

MARCH 28, 1914.

1. TYSON, J. *Treatment of Chronic Nephritis.*
2. BRYANT, W. S. *The Conservation of the Functions of the Ear, Nose and Throat.*
3. RUERGER, L. *Obstructions in the Lower Ureter.*
4. KEILTY, R. A. *A Teaching Classification for the Terata and Hemiterata.*
5. STAUFFER, N. P. *Common Colds.*
6. GWATHMEY, J. T. *The Technic of Oil-Ether Colonic Anesthesia.*
7. LEVIN, H. L. *Organic and Psychogenic Delirium.*
8. *AUSTIN, F. D. *The Dose of Hexamethylenamine.*
9. KAEMPFER, L. G. *Salvarsan in Rhinoscelroma.*
10. HALSTEAD, W. T. *Significance of the Thymus Gland in Graves' Disease.*

8. Austin discusses the pharmacological action of hexamethylenamine and describes chemical tests for free formaldehyde in the fluids of the body. He says it is the duty of every physician who gives the drug to make one of these tests. The antiseptic value of hexamethylenamine in the alkaline fluids of the body is nil, for the conversion of this substance into formaldehyde will not occur in an alkaline medium. The ordinary dose of 5 to 7½ grains three times a day is not sufficient to be of any antiseptic value, even in acid urine. Ten to forty grains every four hours are necessary to insure germicidal action of the formaldehyde in solution. [L. D. C.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

MARCH 28, 1914.

1. SUTTON, R. L. *The Histogenesis of Multiple Basocellular Carcinoma.*
2. CARMAN, R. D. *Radiologic Signs of Duodenal Ulcer, with Special Reference to Gastric Hyperperistalsis.*
3. *MCGUIGAN, H. *Formaldehyde.*
4. *NELSON, K., AND HAINES, E. F. *Observations of the Results of Nine Months' Experience with Neosalvarsan at the United States Military Prison Hospital, Fort Leavenworth, Kan.*
5. KRUMBHAAR, E. B. *Hemolysis Due to Intravenous Injection of Distilled Water.*
6. *LINDEMAN, E. *Blood Transfusion. Report of One Hundred and Thirty-Five Transfusions by the Syringe-Cannula System.*
7. *RAULSTON, B. D., AND WOODYATT, R. T. *Blood Transfusion in Diabetes Mellitus.*
8. REED, C. A. L. *Fixation of the Ptosic Stomach and Colon by Retroperitoneal Implantation.*
9. HALL, J. N. *Why Prolonged Medical Treatment of Peptic Ulcer is Inadvisable.*
10. BAESLACK, F. W. *A Sero-Enzyme Diagnosis of Syphilis.*
11. KNOTT, V. B. *The Removal of the Appendix in All Cases of Appendicitis with Localized Abscess.*
12. DAVIES, B. C. *A Clinical Study of Asthma.*
13. FRIEDLANDER, A., AND WAGNER, E. A. *Diagnosis of Whooping-Cough by the Complement-Deviation Test. Preliminary Note.*
14. BROOKE, R. *The General Action of Quinine in the Treatment of Amebic Dysentery.*
15. BESLEY, F. A. *Pseudopancreatic Cysts, with a Report of Four Cases.*
16. DEAVOR, T. L. *Chronic Retention of the Urine. Twenty-eight Years of Catheterization.*
17. GLAZE, A. L. *Syphilitic Sore Throat Diagnosed as Diphtheria. Subsequent Eruption Confused with Supposed Antitoxic Erythema.*
18. HOWELL, W. B. *Death During Ether Anesthesia —Status Lymphaticus.*
19. CREASY, R. C. *Ankylosis of the Mandible.*

3. This author publishes a very thorough paper on formaldehyde. He finds that the drug has no field of usefulness in medicine other than for local use.

4. The authors found that five injections of neosalvarsan combined with intensive mercurial treatment have failed to show as good curative results, as shown by the serum reactions, as did one dose of salvarsan. In order to "cure" 70 or 80% of cases it would be necessary to use four or five times as much neosalvarsan as salvarsan.

6. Lindeman's article is of value and practical interest. The simplicity of his technic appeals. His analysis of results is valuable.

7. The authors transfused 500 c.c. of peripheral blood from a healthy male donor into a brother suffering from severe diabetes mellitus and obtained a marked rise in the output of sugar, ammonium and acetone bodies and glucose. They conclude that such transfusion is contraindicated in severe diabetes mellitus. [E. H. R.]

THE ARCHIVES OF INTERNAL MEDICINE.

FEBRUARY, 1914.

1. *STEWART, G. N. *Studies on the Circulation in Man. XI. The Blood-Flow in the Hands and Feet in Certain Diseased Conditions of the Vessels or of Their Venous Mechanism.*
2. MACCARTY, W. C., AND BRODERS, A. C. *Chronic Gastric Ulcer and Its Relation to Gastric Carcinoma. Review of 684 Specimens.*
3. *FOLIN, O., DENIS, W., AND SEYMOUR, M. *The Non-Protein Nitrogenous Constituents of the Blood in Chronic Vascular Nephritis (Arteriosclerosis) as Influenced by the Level of Protein Metabolism.*
4. *WILBUR, R. L., AND ADDIS, T. *Urobilin,—Its Clinical Significance.*
5. *NEWBURGH, L. H., AND LAWRENCE, C. H. *The Effect of Heat on Blood-Pressure.*
6. ROBINSON, G. C. *Paroxysmal Auricular Fibrillation.*
7. LONG, J. H., AND MUHLEMAN, G. W. *The Neutral Action of Certain Digestive Ferments.*

1. Stewart reports on a study of the blood flow in the hands and feet in arteriosclerosis, aortic aneurysm, Raynaud's disease, obliterative arteritis, gangrene, and angio-neurotic edema. He found that in cases with marked arteriosclerosis the blood flow in the hands was smaller and the contralateral vasomotor reflexes less pronounced than normal. In thoracic aneurysm the flow in the hands may be normal. When it is subnormal there is no evidence that the existence of the aneurysm as such has any influence in diminishing the flow; the diminution is due to coexisting pathologic conditions, *e.g.*, myocardial changes, valvular lesions. A great difference in the form of the pulse wave in the two radials associated with thoracic aneurysm does not necessarily indicate a difference in flow through the hands. In the cases of Raynaud's disease the hand flows were subnormal, even in the absence of an actual attack, and very much below the normal in the more advanced cases. An abnormally great contralateral reflex vasoconstriction to cold seems to characterize the earlier stages of this disease.

3. Folin, Denis and Seymour studied the non-protein nitrogenous constituents of the blood in arteriosclerotic nephritis and the effect upon them of variations in protein ingestion. Their results indicate that the direct determination of non-protein nitrogen and urea in the blood is a more reliable guide to the protein tolerance of patients than can be obtained from the phenol sulphonephthalein test or any other direct test of renal efficiency.

4. Wilbur and Addis made an exhaustive clinical and experimental study of urobilin, and their conclusions upon its clinical significance are valuable. The intestinal formation of urobilin from the decomposition of bile present within the bowel is the usual mode of origin, but there is evidence that a diseased liver may originate urobilin either directly as a product of its cells or indirectly from decomposition of bilirubin within the bile passages. Under these circumstances the accumulated urobilin in the liver is absorbed by the blood stream and excreted in the urine. There is a close association between increase of urobilin in the urine and disturbance of liver function. An increased quantity of urobilin in the stools indicates increased blood destruction. The interpretation of urobilin findings in the urine is somewhat problematical, while the determination of an increased intestinal excretion rests on a much firmer basis. Urobilinuria occurs almost constantly in the hypertrophic stage of hepatic cirrhosis. The degree of urobilinuria is a good index of the damage done to the liver parenchyma by chronic passive congestion, a marked degree of it being of ominous prognostic significance in cardiac decompensation. Urobilinuria is absent in obstructive jaundice, present in hematogenous jaundice. In obscure febrile conditions it is of diagnostic importance. The persistence of urobilinuria after malarial attacks in the absence of fever and of urobolin in the stools indicates cirrhosis, abscess or some other complication. In pernicious anemia total urobilin elimination is very large, in secondary anemia comparatively small. In pneumonia early and marked urobilinuria is a bad prognostic sign. Severe nephritis, even in the presence of increased production of urobilin, may prevent definite urobilinuria, so that large amounts of urobilin in the urine may be taken as indirect evidence of a certain degree of efficiency in the renal epithelium.

5. Newburgh and Lawrence studied the effect of heat on blood pressure in a series of experiments on cats and rabbits. They have found that degrees of hyperthermia not greater than those encountered in infections are sufficient to cause marked hypotension. The increased body temperature of infection is a potent factor in the production of the lowered blood-pressure which occurs in such conditions, and may be the entire cause of it. [L. D. C.]

JOURNAL OF EXPERIMENTAL MEDICINE.

MARCH 1, 1914.

1. *CLARK, P. F., FRASER, F. R., AND AMOSS, H. L. *The Relation to the Blood of the Virus of Epidemic Poliomyelitis.*
2. LECOUNT, E. R., AND LONG, E. R. *The Relation between the Fat Content of the Bile and Fatty Changes in the Liver.*
3. JOBLING, J. W., AND PETERSEN, W. *Soaps as Ferment-Inhibiting Agents. Studies on Ferment Action.*
4. JOBLING, J. W., AND PETERSEN, W. *Ferment-Inhibiting Substances in Tubercle Bacilli. Studies on Ferment Action.*
5. KARSNER, H. T., AND DENIS, W. *A Further Study of Nitrogen Retention in the Blood in Experimental Acute Nephritis.*
6. KARSNER, H. T., AND DENIS, W. *A Note on Nitrogen Retention Following Repeated Injections of Nephrotoxic Agents.*
7. LAMBERT, R. A. *A Note on the Specificity of Cytotoxins.*
8. *EVANS, H. M., BOWMAN, F. B., AND WINTERNITZ, M. C. *An Experimental Study of the Histogenesis of the Miliary Tubercle in Vitally Stained Rabbits.*
9. MEDIGRECEANU, F. *The Indophenoloxydase Content of Tissues from Rabbits Infected with Pneumococcus.*
10. MEDIGRECEANU, F. *A Comparative Study of the Rate of Proteolysis of Tissues Obtained from Rabbits Infected with Pneumococci and of Tissues from Normal Rabbits.*

1. Clark, Fraser and Amoss were unable to infect monkeys with specimens of human blood taken during the paralytic stage of poliomyelitis. In only one instance out of ten tests were they able to produce infection with a specimen of blood from experimental poliomyelitis in monkeys. In general their experiments showed that infection is accomplished far less readily through the circulation than by means of the more direct lymphatic and nervous channels of communication with the central nervous system.

8. Evans, Bowman and Winternitz carefully studied the histogenesis of an experimental miliary tubercle, developing inside the liver lobules in animals that have been vitally stained and inoculated with bovine tubercle bacilli. It is of considerable interest that the effects of the dye and of the tubercle bacilli are somewhat similar. They were able to show that the mononuclear cells which enter most actively into the reaction induced by the tubercle bacilli are endothelial and not hematogenous in origin. [R. I. L.]

THE LANCET.

MARCH 7, 1914.

1. *GOODHART, J. F. *A Lecture on Glycosuria and the Albuminuria of Adolescents.*
2. *GILFORD, H. *Hunterian Lectures on Infantilism. Lecture II.*
3. *SHERMAN, T. *The Morbid Anatomy of Tuberculosis in Man.*
4. MAY, O. *The Significance of Diabetic Family History in Life Assurance.*
5. FARRANT, R. *The Pathological Changes of the Thyroid in Disease.*
6. HUGHES, B. *Case of Acute Suppurative Appendicitis Complicated by Gangrene of the Ileum.*

1. Goodhart discusses glycosuria, in contradistinction from diabetes and its relation to retinal changes occurring in the course of arteriosclerosis and renal disorders—known as "gouty glycosuria." The latter part of his paper he devotes to albuminuria of adolescence its causation and diagnosis.

2. In his second lecture, Gilford continues his discussion of infantilism as associated with anomalies of sex organs, thyroid insufficiency, and abnormalities of the pituitary gland. He goes into the historical side of the question and gives much interesting information on the general subject.

3. Sherman presents conclusions from his detailed study of the morbid anatomy of tuberculosis in man as follows: Hypersensitiveness due to a primary infection is probably of great importance in relation to reinfection, not necessarily from a primary focus but from a new infection from without. The majority of cases of pulmonary tuberculosis are due to aerogenic infection, although retrograde infections do occur. There is no evidence in favor of a spread by direct continuity from the deep cervical glands to the lungs. In children manifest pulmonary tuberculosis is often a sequel of bronchial gland tuberculosis. In Scotland bovine infections in childhood are commoner than in most other parts of the world. There is much of interest and value in this article. [J. B. H.]

MARCH 14, 1914.

1. SHORT, A. R. *Hunterian Lecture on Changes in the Blood in the Causation of Surgical Shock.*
2. BASSETT-SMITH, P. W. *The Agglutination of M. Melitensis by Normal Cows' Milk.*
3. MOYNIHAN, B. G. A., AND TATLOW, E. T. *A Case of Transgastric Excision of a Gastro-jejunal Ulcer.*
4. BROWNING, C. H. *The Technic of the Wassermann Reaction with Special Reference to the Use of Antigens Containing Cholesterin.*
5. ROBINSON, H. B. *Popliteal Aneurysm.*
6. HACKENBRUCH, PROF. *The "Ambulant" Treatment of Fractures with Plaster-of-Paris and Fracture Clamps.*
7. GRAY, H. T. *Recurrent Intussusception; with Suggestions as to the Etiology.*

BRITISH MEDICAL JOURNAL.

MARCH 7, 1914.

1. *OSLER, W. *The Visceral Lesions of Purpura and Allied Conditions.*
2. BRADBURN, T. S. *Oral Sepsis Simulating Henoch's Purpura.*
3. STEWART, P. *Further Note upon a Case of Hysterical Monoplegia Following Electric Shock.*
4. *SHUFFLEBOTHAM, F. *The Milroy Lectures on the Hygienic Aspect of the Coal Mining Industry in the United Kingdom. Lecture II.*

1. Osler interestingly describes certain manifestations of purpura, other than skin lesions, which occur in the course of the disease. These are of two types, mechanical, due to the presence of an exudate in the walls of the stomach, intestines, or elsewhere, and second, inflammatory, as nephritis, pleurisy, endocarditis, etc. He presents various interesting cases showing cerebral manifestations, ocular lesions, gastro-intestinal symptoms, angio-neurotic edema, epistaxis and renal complications, cardiac and respiratory lesions.

4. Shufflebotham, in his second lecture on the hygiene of coal mining, takes up the causes of explosions and their prevention by watering of coal dust, etc. He considers the various poisonous gases, such as black damp, fire damp, after-damp, etc., the treatment of cases of asphyxiation from such causes, and last he refers to rare causes of poisoning, such as sulphuretted hydrogen, smoke, nitrous fumes, et al.

[J. B. H.]

MARCH 14, 1914.

1. *HOLMES, G. *The Diagnosis of Tabes Dorsalis.*
2. *CAMPBELL, H. *The Treatment of Syphilis of the Nervous System by Intrathecal Injections.*
3. *MCILROY, A. L. *Some Problems in the Treatment of Venereal Diseases.*
4. *ABRAHAM, J. J. *Arseno-therapy in Syphilis with More Particular Reference to "Gabyl."*
5. BAYLY, H. W. *The Diagnosis and Treatment of Chronic Gonorrhea and Its Local Complications.*
6. BARNES, A. E. *A Case of Otitic Meningitis and Cerebellar Abscess with Recovery.*
7. *SHUFFLEBOTHAM, F. *The Milroy Lectures on the Hygienic Aspect of the Coal-Mining Industry in the United Kingdom. Lecture III.*

1. This is a practical article on the diagnosis of tabes, but presents nothing new.

2. Campbell believes that the injection of salvarsanized serum into the spinal cord is the only effective way of treating certain forms of syphilis of the central nervous system. It should be begun as early as possible. It acts by destroying the spirochaetes within the central nervous system and the cerebrospinal fluid.

3. Among the preventive methods in handling the venereal problem, McIlroy recommends that all measures to prevent compulsory prostitution be encouraged; that the mentally deficient be segregated; that the public be educated as to the seriousness and size of the problem and that prompt notification of all abortions and premature births be made. In curative methods he urges that everything be done to keep patients under observation as long as possible and that this be only in the hands of the medical profession. He does not believe in special hospitals for such cases.

4. Abraham is of the opinion that mercury is regaining its old position as the main standby in the treatment of syphilis; that the real progress of arseno therapy is not in effecting a complete cure but in bringing about a rapid healing in the early, highly contagious stages of the disease.

7. In the third Milroy Lecture, Shufflebotham considers dust and its effects, particularly as regards tuberculosis and fibrosis. He discusses the symptoms and signs of the fibroid lung and then takes up the influence of temperature on the health of miners.

[J. B. H.]

IL POLICLINICO.

MEDICAL SECTION.

OCTOBER, 1913.

1. MASSALONGO, R., AND GASPERINI, N. *Pneumonic Hypertrophic Osteoarthropathy.*
2. IZAR, G. *A Case of Lung Abscess Cured by Means of Artificial Pneumothorax.*
3. PEZZI, P. *Considerations upon Two Cases of Complete Auriculo-Ventricular Dissociation.*
4. PONTANO, T. *Reports Concerning Serum Disease and Anaphylactic Phenomena.*

SURGICAL SECTION.

1. SCALONE, I. *Strangulated Crural Hernia of the Uterine Tube, with Syndrome of Paralytic Ileus.*
2. LEOTTA, N. *Wounds of the Heart.* (*Conclusion.*)
3. DIALTI, G. *Points of Technic in Suprapubic Prostatectomy.*
4. STEFANO, P. A. *Some Cases of Ludwig's Angina.*
5. CASALI, R. *Contribution to the Topography of Sinus Terminalis of the Spinal Dura Mater with Surgical Considerations.*
6. CHIASSERINI, A. *Vasal Plastics with Free Flaps of Aponeurosis.*

NOVEMBER, 1913.

MEDICAL SECTION.

1. *BOSISIO, R. *Experimental Studies on Antityphoid Vaccination in Man.*
2. MORESCHI, C. *Chronic Lymphatic Leukemia and Intercurrent Typhoid Infection.*
3. SISTO, P. *Studies on Progressive Pernicious Anemia.*

1. Bosisio reviews the experimental work of many investigators on typhoid vaccination and describes some experiments of his own. He is satisfied that Loeffler's method of preparing vaccine is the best. Such vaccine remains potent for a long time and a single minute dose of it given intravenously assures a high grade of immunity of long duration, appearing within eight days of injection. [L. D. C.]

SURGICAL SECTION.

1. *GIORDANO, G., AND STROPENI, L. *Experimental Contribution to the Surgery of the Diaphragm.*
2. SERAFINI, G. *Total Spino-Facial Anastomosis for Traumatic Lesion of the Facial.*

3. NASSETTI, F. *The Operability and Routes of Approach to Tumors of the Pineal Gland.*
4. PIAZZA, E. L. *Contribution to the Knowledge of the Congenital Median Formations of the Neck.*
5. CHIASSERINI, A. *Experimental Inflammatory Lesions of the Hypophysis and of the Hypophysary Region.*
6. PINARDI, G. *Experimental Researches on Transplantations of the Urethra.*

1. The authors report ten animal experiments in diaphragmatic surgery by the endothoracic route, especially the replacement of large diaphragmatic flaps by fascia lata. [R. M. G.]

DECEMBER, 1913.

MEDICAL SECTION.

1. SISTO, P. *Studies on Progressive Pernicious Anemia.*
2. BRUGNATELLI, A. *A Case of Bilious Peritonitis with Effusion of Bile in the Peritoneum without Perforation of the Biliary Tract.*
3. SFORZA, C., AND COSCO, G. *The Spread of Human Tuberculosis to the Muscles and the Bone Marrow.*
4. *ANSELINI, A. *A Clinical Contribution to the Diagnostic Value of Antistaphylolysin.*

4. Anselini reports results of a study of the blood serum in cases of staphylococcus infection as compared with that of normal individuals and of persons suffering from other diseases. He finds that a certain amount of antistaphylolysin is present in normal serum and a much larger amount in patients with staphylococcus infections. The serum of persons with staphylococcaemia, containing a considerable quantity of antistaphylolysin, does not show complement deviation with aqueous extracts of staphylococci, antiformin extracts being used as antigen. [L. D. C.]

SURGICAL SECTION.

1. PIGNATTI, A. *Grafts on the Vas Deferens. (To be continued.)*
2. BARTOLOTTA, E. *Operative and Histologic Contribution to the Study of Congenital and Elephantiasic Fibromata of the Lower Eyelid.*
3. FORONI, C. *Sclerectomy ab Externo.*

THE SEI-I-KWAI MEDICAL JOURNAL.

DECEMBER, 1913.

1. HIGUCHI, S. *A Case of Extra-Uterine Gestation Occurring Twice in One Woman.*
2. HIGUCHI, S. *Report on Fifty Cases of Extra-Uterine Pregnancy.*
3. KAMADA. *On a Case of Carcinoma Uteri Complicating Pregnancy.*
4. OHKINNA. *On a Case of Primary Carcinoma of Vagina.*
5. IWAHARA. *On a Treatment of Vomitus Matutinus.*
6. TSURUTO. *On Two Cases of Angina Pectoralis Occurring in the Course of Gastro-Intestinal Disorder.*

Obituary.

JOSEPH D. BRYANT, M.D.

DR. JOSEPH D. BRYANT of New York, professor of surgery in the University and Bellevue Hospital Medical College, died from diabetes in St. Vincent's Hospital on April 7. Dr. Bryant was born at East Troy, Wis., on March 12, 1845, and was graduated from Bellevue Hospital Medical College in 1868. He then served as interne at Bellevue. During almost his entire professional career he was connected in some capacity with the hospital, and for many years had been attending surgeon. In 1898 he was appointed professor of surgery in the Bellevue Medical School, and when the consolidation of this with the medical department of New York University was effected he was made professor of surgery in the new medical college. He had been visiting surgeon to St. Vincent's Hospital for twenty-seven years, and at the time of his death was also consulting surgeon to the Gouverneur, Woman's, and Manhattan State Hospitals, the Hospital for Ruptured and Crippled, and St. Joseph's Hospital, Yonkers. Dr. Bryant was the physician and confidential friend of Mr. Cleveland, both when he was governor and president, and by him was appointed state commissioner of health and surgeon-general of the state national guard. He was greatly honored by the profession, serving at various times as president of the New York State Medical Association, the Medical Society of the state of New York, the New York Academy of Medicine, and the American Medical Association. He was the author of an elaborate work on operative surgery, and collaborated with Dr. Albert H. Buck in the chief editorship of the "American System of Surgery."

Miscellany.

ANOTHER METHOD OF PROVIDING DENTAL NURSES.

IN the issues of the JOURNAL for Jan. 1 and 22 (Vol. clxx, pp. 24 and 139) we commented editorially on the proposed measure, now pending before the General Court, providing various changes in the methods of registration of dentists in Massachusetts. At a recent meeting of the Massachusetts Society for the Advancement of Mouth Hygiene, this measure was strongly disapproved. The society favors the accomplishment of the same end by adopting the following amendment to the present law regulating and governing the practise of dentistry in the state:

"Nor shall the law prevent a person, male or female, from cleaning the teeth of and teaching mouth hygiene to the children in public or private schools or institutions approved therefor by the board of health of the city or town in which such school or institution is located, which approval upon written application by the authorities of such school or institution said board of health in its discretion is hereby authorized to give, provided that such person is 20 years of age, of good moral character, has duly qualified

by passing a satisfactory examination in the subjects of mouth hygiene, sterilization, transmission of infectious and contagious diseases and the cleaning of teeth, and holds a certificate to that effect from the board of registration in dentistry, and upon the payment by each applicant of a fee of $5, which shall not be returned. Such board is hereby authorized to make such examination and issue such certificate."

The annual report of the Massachusetts State Board of Registration in Dentistry, recently filed, also opposes the establishment of dental nurses on the ground that in private offices they would be likely to practise other dental procedures than teeth-cleaning.

"Conviction for practicing dentistry by these certified 'dental nurses' would well nigh be impossible," says the report. "Obviously, the objection must be apparent. The passing of such a bill would be the opening of the door to an indiscriminate lot of unqualified adventurers to the general practise of dentistry and a virtual repeal of the present law. Therefore, the work of these qualified 'nurses' should be strictly limited to public and private hospitals, schools and charitable institutions.

Correspondence.

THE FRIEDMANN SERUM AND THE SOCIETY OF GERMAN SANATORIUM PHYSICIANS.

NEW YORK, April 7, 1914.

Mr. Editor: A sensational notice appeared at the beginning of last month in some of the leading New York American and German-American newspapers in which it was stated that on the occasion of the annual meeting of the Association of German Sanatorium Physicians on Febrbuary 28, one hundred and twenty of these physicians had carefully investigated the results of Friedmann's work. It was reported that 40,000 cases had been treated with Friedmann's serum and that the successes had been simply phenomenal. It was furthermore stated that Dr. Friedrich Franz Friedmann had been the guest of honor at a banquet given by the sanatorium physicians and that he had been effusively thanked by Privy-Councillor Professor Dr. Pannwitz for his work, in the name of the sanatorium physicians present. Finally, it was said in the newspaper report that Dr. Friedmann had made the statement to an American press representative that Professor Ehrlich had expressed the opinion that the Friedmann serum was absolutely harmless.

In a communication received by the undersigned, bearing the signatures of the President, Dr. O. Pischinger, the Vice-President, Dr. J. Ritter, and the Secretary, Dr. Schellenberg, of the Association of Sanatorium Physicians of Germany, Austria and Switzerland, he was requested to enlighten the American medical profession concerning the incident connected with their visit to the Friedmann Institute in Berlin, and to give the facts the widest possible publicity at least among medical men.

First of all, the officers of the association expressed their astonishment that the visit of the sanatorium physicians to the Friedmann Institute should have been used as a means of advertising Friedmann and his remedy abroad. Because of the report of cures which constantly crept into the German medical and lay press and the demands for the remedy from many sanatorium patients, it was natural that the sanatorium physicians while visiting Berlin should wish to see for themselves what was going on in the Friedmann Institute. Thus they asked Friedmann to show them his cases and give them a talk on the indication for his remedy. About 60 of the 125 members of the association visited the Friedmann Institute on the 26th and 27th of February, 1914. They distinctly stated that their visit was in no way to be considered a pilgrimage to pay homage to Friedmann for his discovery but rather an investigation to find out just how much truth there was in his claims. Many had already tried the remedy and had been disappointed, others were prejudiced, and it is for this reason that they wanted to examine critically into Friedmann's claims. It is absolutely untrue that a banquet was given to Dr. Friedmann. After the conclusion of the visit there was a confidential conference, without Dr. Friedmann, at which the members concluded to discuss the theme again next fall and in the meantime collect as much material as possible.

That the undersigned may not be accused of prejudice or misinterpretation, I wish to quote in German the most essential statements which were made as the result of the visit of the association to the Friedmann Institute:

"Wir waren uns darüber einig, dass die uns von Friedmann gezeigten Fälle klinisch recht schlecht beobachtet waren und im Allgemeinen keineswegs als 'Erfolge' angesehen werden konnten. Wir haben uns gewundert, dass uns keine ordnungsmässig geführte Kurve gezeigt wurde. Die Röntgenplatten, die man uns zum Beweis zeigte, bewiesen tatsächlich garnichts. Wir geben zu, dass einzelne Fälle allerdings einen gewissen Eindruck auf uns gemacht haben, *wobei wir uns aber auch darüber klar waren, dass solche Fälle auch ohne jede Behandlung und bei jeder Behandlung vorkommen können*, und dass die Zahl dieser Fälle verhältnissmässig *viel* zu klein war, um ein günstiges Urteil über das Mittel abgeben zu können."

(We were of the unanimous opinion that the cases shown by Friedmann had been clinically very badly observed, and as a whole could not be considered as successes or cures. We were astonished that no carefully recorded temperature and weight curves were shown. The x-ray plates which were shown to us as evidence of cures did not actually prove anything whatsoever. We will admit that some cases indeed made an impression upon us, but here we must also remember that such cases occur without any treatment or with any kind of treatment, and that the number of them were altogether too few to permit a favorable judgment of the value of the remedy.)

I have since received a letter from Geheimrat Professor Dr. Pannwitz in which he substantiates what has been said in the official communication from Drs. Pischinger, Ritter and Schellenberg. He particularly expresses his indignation at the use of his name in connection with a banquet which never took place. He declared the whole thing to be a newspaper invention.

Prof. Dr. L. Brauer, Director of the Eppendorf Krankenhaus of Hamburg, who had also heard the American version of the sanatorium physicians' visit to the Friedmann Institute in Berlin, wrote me a letter full of indignation and said at the same time that "he had tried Friedmann's remedy at the Eppendorfer Krankenhaus and the results had been unfavorable." He has reported these unfavorable results recently at the Balneological Congress and the Hamburger Asrzte Verein, and intends to publish more on the subject at an early date. He has since sent me the advance sheets of his forthcoming communication regarding Friedmann wherein he says: "The pulmonary cases tested in the Eppendorfer and Salemburg hospitals with Friedmann's method did not improve, but some of them without a shadow of doubt were rendered worse by the treatment. Five cases of bone and joint tuberculosis in children treated with the Friedmann serum by Dr. Trepler in the Salemburg institution were not influenced at all by the treatment and in

one case, although the movement of the afflicted joint increased, the general condition of the lesions was rendered worse."

In paying a gratifying tribute to the earnest and unbiased work done with Friedmann's serum by American investigators, which likewise gave unfavorable results, Professor Brauer advised me, in the interest of the German medical profession, and especially in the interest of the unfortunate patients who naturally are inclined to accept such advertised endorsement as genuine, that it would be most desirable for the present status of the Friedmann remedy in Germany to be made clear to the American medical profession and the laity.

I am sure our German colleagues in general and particularly the German sanatorium physicians, Professors Pannwitz and Brauer, will be greatly indebted to you, Mr. Editor, if you will give the foregoing a space in your esteemed journal and thus make clear the real status of Friedmann's remedy in Germany.

Respectfully yours,

S. A. KNOPF, M.D.

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR THE WEEK ENDING APRIL 4, 1914.

March 27, Surgeon G. F. Freeman, from *North Carolina* to the *Nebraska*.

P. A. Surgeon E. H. Old, detached, *Nebraska* to wait orders.

March 28, Medical Director G. T. Smith, detached. Navy Yard, Washington, D. C., to wait orders.

Surgeon C. E. Riggs, detached, *Louisiana* to wait orders.

Surgeon F. C. Cook, detached, Naval Hospital, Puget Sound, Washington, to *Louisiana*.

April 1, Asst. Surgeon J. T. Boone, commissioned asst. surgeon, M.R.C., March 17, 1914.

April 2, P. A. Surgeon D. C. Walton, detached, Naval Hospital, Brooklyn, N. Y., and ordered to Naval Academy, Annapolis, Md.

Asst. Surgeon C. I. Wood, M.R.C., to New York Hospital.

EXAMINATION OF CANDIDATES FOR ASSISTANT SURGEON.

TREASURY DEPARTMENT.

UNITED STATES PUBLIC HEALTH SERVICE.

Boards of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, 3 B Street, SE., Washington, D. C., and at the Marine Hospitals of Boston, Mass., Stapleton, N. Y., Chicago, Ill.; St. Louis, Mo.; New Orleans, La.; and San Francisco, Cal., on Monday, April 27, 1914 at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

For investigation to appear before the board of examiners, address "Surgeon General Public Health Service, Washington, D. C."

APPOINTMENTS.

DR. L. D. BRISTOL, of Syracuse Medical School, has recently been appointed director of the public health laboratory of the University of North Dakota.

RECENT DEATHS.

DR. JOSEPH B. BRYANT, of New York, died in that city on April 7, at the age of 69 years.

DR. G. P. DAVIS, who died on April 1, at Hartford, Conn., was born in 1845. He graduated from Yale in 1865, and in 1869 received the degree of M.D. from the New York College of Physicians and Surgeons. He was a former president of the Connecticut State Medical Society.

DR. PHILIP MANSFIELD FITZSIMMONS who died on April 4 at Cambridge, Mass., was born in Ireland in 1863. He migrated to the United States in 1889, and in 1892 received the degree of M.D. from the Uuniversity of Vermont. He settled in the practise of his profession at Cambridge, where he served as medical inspector of schools. He was a member of the American Medical Association, a Fellow of The Massachusetts Medical Society, and a member of the Cambridge Medical Improvement Society. He is survived by one daughter and one son.

DR. F. J. S. GORGAS, formerly dean of the dental department of the University of Maryland, died at Baltimore on April 8, at the age of 80 years.

DR. ALLAN FOSTER BARNES, of Cambridge, a Fellow of The Massachusetts Medical Society, died at the Massachusetts General Hospital, Boston, April 12, 1914, aged 38 years.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of Women. By Charles A. L. Reed. D. Appleton and Company. 1913.

Preventable Blindness—A Challenge to the Professions. By Henry Copley Greene, B.A. Reprint.

Essentials of Prescription Writing. By Cary Eggleston. W. B. Saunders Company. 1913.

Materia Medica, Pharmacology, Therapeutics, Prescription Writing. By Walter A. Bastedo, Ph.G., M.D. W. B. Saunders Company. 1913.

The Surgical Clinics of John B. Murphy, M.D. October, 1913. W. B. Saunders Company. 1913.

A Practical Treatise on Medical Diagnosis. By John H. Musser, M.D. Sixth edition. Lea and Febiger. 1913.

Public Health Report, Vol. 28, No. 45, Nov. 7, 1913. Containing Information of the Current Prevalence of Disease, the Occurrence of Epidemics, Sanitary Legislation and Related Subjects.

Public Health Reports. Index. Vol. 28, Part I, Nos. 1-26. January-June, 1913.

The White Linen Nurse. By Eleanor Hallowell Abbott. The Century Company, New York. 1913.

The Problem. By Charles Percy, M.D. The Shakespeare Press. New York, 1913.

Cancer of the Breast. By C. B. Lockwood. Oxford Medical Publications. 1913.

Social Work in Hospitals. By Ida M. Cannon. Survey Associates, Russell Sage Foundation.

First Book of Health. By Carl Hartman and Lewis Bradley Bibb. World Book Company. 1913.

The Human Body and Its Enemies. By Carl Hartman and Lewis Bradley Bibb. World Book Company. 1913.

Early Pulmonary Tuberculosis. By John B. Hawes, 2nd. M.D. William Wood and Company. 1913.

Uterine Carcinoma. By A. F. A. King, LL.D. Reprint.

A Manual of Operative Surgery with Surgical Anatomy and Surface Markings. By Duncan G. L. Fitzwilliams, M.D. William Wood and Company. 1913.

Epidemic Infantile Paralysis. By Professor Paul H. Romer. William Wood and Company. 1913.

A Text-book of Gonorrhea. By Dr. Georges Luys. William Wood and Company. 1913.

On the Volume Changes of the Arm During Muscular Exercise. By Esther V. Starkweather. Reprint.